

DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
NR NUMBER: 043-942  
AMENDMENT NUMBER: 6

ONR:603:EAS:eal  
Nonr-1858(04)  
(Mathematical  
Sciences Division)

26 February 1962

The Trustees of Princeton University

Princeton, New Jersey

To establish the negotiated overhead rate under Task Order Nonr-1858(04) for the period from 1 July 1959 through 30 September 1959 in accordance with Clause 33, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under Section D covering the period from 1 July 1959 through 30 June 1960 in its entirety and substitute in lieu thereof the following:

<u>%</u>	<u>"Period for which Applied"</u> <u>From</u> <u>Through</u>	
<u>72%</u> of the salaries and wages reimbursed under Clause 18(a)(2) of the contract."	1 July 1959	30 September 1959

This amendment makes no change in the estimated cost of Task Order Nonr-1858(04).

The Trustees of Princeton University UNITED STATES OF AMERICA

Name of Contractor		Signature of Contracting Officer	
By <u>SK</u> <u>[Signature]</u>	By <u>[Signature]</u>	Signature	Signature
Date	Date	Signature of Contracting Officer	Date
Raymond J. Woodrow		H. D. MOORE	
Assistant Treasurer		CDR, SC, USN	
Typed Name and Title			



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
NR NUMBER: 043-942  
AMENDMENT NUMBER: 5

ONR:603:EAS:eal  
Nonr-1858(04)  
(Mathematical  
Sciences Division)

20 February 1961

The Trustees of Princeton University

Princeton, New Jersey

To establish the negotiated overhead rate under Task Order Nonr-1858(04) for the period from 1 July 1958 through 30 June 1959 in accordance with Clause 33, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under Section D covering the period from 1 July 1958 through 30 June 1959 in its entirety and substitute in lieu thereof the following:

<u>%</u>	<u>"Period for which Applied"</u>	
	<u>From</u>	<u>Through</u>
67% of the salaries and wages reimbursed under Clause 18(a)(2) of the contract	1 July 1958	30 June 1959
At billing rates acceptable to the Comptroller of the Navy (Contract Audit Division.)"	1 July 1959	30 June 1960

This amendment makes no change in the estimated cost of Task Order Nonr-1858(04).

ORIGINAL EXECUTED COPY



Contract Number: Nonr-1858(04), Amendment 5

If the foregoing is acceptable to you please indicate your acceptance thereof by executing all three (3) copies of this amendment and return them to the Office of Naval Research for execution by the Government and the return of a fully executed amendment to you.

THE UNITED STATES OF AMERICA

By

E. P. Bledsoe

E. P. BLEDSOE  
Contracting Officer

(CONTRACTING OFFICER)

WITNESSES

(CONTRACTOR)

By

SK

R. J. Woodrow

Raymond J. Woodrow  
Assistant Treasurer

NOTE.— In case of corporation, witnesses not required but certificate below must be completed. Type or print names under all signatures.

(TITLE)

(ADDRESS)

NOTE.—Contractor, if a corporation, should cause the following certificate to be executed under its corporate seal, provided that the same officer shall not execute both the contract and the certificate.

CERTIFICATE

I, Alexander Leitch, certify that I am the  
Secretary  
of the corporation named as Contractor herein;  
that Raymond J. Woodrow, who signed this contract on behalf of  
Assistant Treasurer  
the Contractor, was then  
of said corporation;  
that said contract was duly signed for and in behalf of said corporation by authority of its governing body,  
and is within the scope of its corporate powers.

Alexander Leitch

Alexander Leitch (SIGNATURE)

Secretary

(CORPORATE SEAL) Navexos 4450



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 4

ONR:603:CAH:cas  
Nonr-1858(04)  
(Mathematical Sciences  
Division)

The Trustees of Princeton University

Princeton, New Jersey

16 FEB 1959

To establish the negotiated overhead rate under Task Order Nonr-1858(04) for the period from 1 July 1957 through 30 June 1958 in accordance with Clause 33, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under Section D covering the period from 1 July 1957 through 30 June 1958 in its entirety and substitute in lieu thereof the following:

<u>%</u>	<u>"Period for which Applied</u>	
	<u>From</u>	<u>Through</u>
(i) 52% of the salaries and wages reimbursed under Clause 18(a)(2) of the contract	1 July 1957	30 June 1958
(ii) 52% provisionally of the salaries and wages reimbursed under Clause 18(a)(2) of the contract	1 July 1958	30 June 1959."

This amendment makes no change in the estimated cost of Task Order Nonr-1858(04).

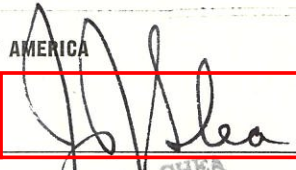
ORIGINAL RECORDED COPY



If the foregoing is acceptable to you please indicate your acceptance thereof by executing all three (3) copies of this amendment and return them to the Office of Naval Research for execution by the Government and the return of a fully executed amendment to you.

THE UNITED STATES OF AMERICA

By

  
J. J. SHEA  
CDR, SC USN

WITNESSES

(CONTRACTING OFFICER)  
The Trustees of Princeton University

By

(CONTRACTOR)  


NOTE.—In case of corporation, witnesses not required but certificate below must be completed. Type or print names under all signatures.

Raymond J. Woodrow  
Assistant Treasurer

(TITLE)

(ADDRESS)

NOTE.—Contractor, if a corporation, should cause the following certificate to be executed under its corporate seal, provided that the same officer shall not execute both the contract and the certificate.

CERTIFICATE

I, Alexander Leitch, certify that I am the  
Secretary of the corporation named as Contractor herein;  
that Raymond J. Woodrow, who signed this contract on behalf of  
the Contractor, was then Assistant Treasurer of said corporation;  
that said contract was duly signed for and in behalf of said corporation by authority of its governing body,  
and is within the scope of its corporate powers.



Alexander Leitch  
Secretary

(CORPORATE SEAL)



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 3  
AUTHORITY: NR 043-942/10-1-58

ONR:610:LAD:bnk  
Nonr-1858(04)  
(Mathematical Sciences  
Division)

The Trustees of Princeton University

Princeton, New Jersey

1 OCT 1958

The Contractor has advised that due to lack of qualified personnel during the present period of performance, the research in the field of non-linear differential equations, under Task Order Nonr-1858(04), cannot be completed within the period originally contemplated. In order to permit completion of the research, it is the desire of the Government and the Contractor that the period of performance under said Task Order be extended.

In consideration of the foregoing, and subject to the Contractor's execution of Amendment Number 6 to Contract Nonr-1858(00), Task Order Nonr-1858(04), as amended, is hereby further amended by deleting Section J in its entirety and substituting in lieu thereof the following:

"SECTION J - The performance of work under this Task Order shall be completed on 30 September 1959."

This amendment makes no change in the total estimated cost of Task Order Nonr-1858(04).

This amendment is made pursuant to 10 U.S.C. 2304(a)(5), and any required Determination and Findings with respect thereto has been made.

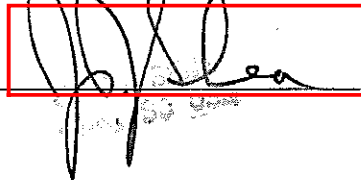
ORIGINAL EXECUTED COPY



If the foregoing is acceptable to you please indicate your acceptance thereof by executing all three copies (3) of this amendment and return them to the Office of Naval Research for execution by the Government and the return of a fully executed amendment to you.

THE UNITED STATES OF AMERICA

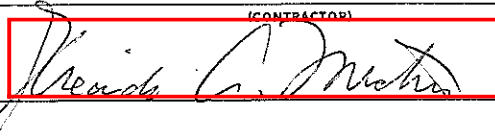
By



(CONTRACTING OFFICER)

CONTRACT REVIEWED FOR FISCAL  
WITNESSES DATA AND SIGNATURES BY 11-7-58  
FOR COMPTROLLER, ONE

By



Ricardo A. Mestres  
Treasurer

(TITLE)

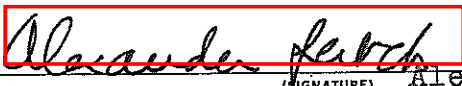
(ADDRESS)

NOTE.—In case of corporation, witnesses not required but certificate below must be completed. Type or print names under all signatures.

NOTE.—Contractor, if a corporation, should cause the following certificate to be executed under its corporate seal, provided that the same officer shall not execute both the contract and the certificate.

CERTIFICATE

I, Alexander Leitch, certify that I am the  
Secretary of the corporation named as Contractor herein;  
that Ricardo A. Mestres, who signed this contract on behalf of  
the Contractor, was then Treasurer of said corporation;  
that said contract was duly signed for and in behalf of said corporation by authority of its governing body,  
and is within the scope of its corporate powers.



(SIGNATURE)

Alexander Leitch  
Secretary

(CORPORATE SEAL)



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 2

ONR:603:CAH:eas  
Nonr-1858(04)  
(Mathematical Sciences  
Division)

The Trustees of Princeton University

Princeton, New Jersey

12 JUN 1958

To establish the negotiated overhead rate under Task Order Nonr-1858(04) for the period from 1 October 1956 through 30 June 1957 in accordance with Clause 33, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under Section D covering the period from 1 October 1956 through 30 June 1957 in its entirety and substitute in lieu thereof the following:

	<u>"Period for which Applied</u> <u>From</u> <u>Through</u>	
(i) <u>58%</u> of the salaries and wages reimbursed under Clause 18(a)(2) of the contract	1 October 1956	30 June 1957
(ii) <u>58%</u> provisionally of the salaries and wages reimbursed under Clause 18(a)(2) of the contract	1 July 1957	30 June 1958."

This amendment makes no change in the estimated cost of Task Order Nonr-1858(04).

ORIGINAL EXECUTED COPY



Contract Number: ~~Non~~-1858(04), Amendment Number: 0

If the foregoing is acceptable to you please indicate your acceptance thereof by executing all three copies (3) of this amendment and return them to the Office of Naval Research for execution by the Government and the return of a fully executed amendment to you.

THE UNITED STATES OF AMERICA

By

J. J. SHEA  
CDR, SC USN

(CONTRACTING OFFICER)

WITNESSES

(CONTRACTOR)

By THE TRUSTEES OF PRINCETON UNIVERSITY

NOTE.—In case of corporation, witnesses not required but certificate below must be completed. Type or print names under all signatures.

Ricardo A. Mestres

Treasurer  
(TITLE)

Nassau Hall, Princeton, New Jersey  
(ADDRESS)

NOTE.—Contractor, if a corporation, should cause the following certificate to be executed under its corporate seal, provided that the same officer shall not execute both the contract and the certificate.

CERTIFICATE

I, Alexander Leitch, certify that I am the  
Secretary of the corporation named as Contractor herein;  
that Ricardo A. Mestres, who signed this contract on behalf of  
the Contractor, was then Treasurer of said corporation;  
that said contract was duly signed for and in behalf of said corporation by authority of its governing body,  
and is within the scope of its corporate powers.

Alexander Leitch  
(SIGNATURE)

(CORPORATE SEAL)



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 1  
AUTHORITY: NR 043-942/5-15-57  
APPROPRIATION: (See next to last paragraph hereof)  
INCREASE: \$20,000.00

ONR:610:JR:njf  
Nonr-1858(04)  
(Mathematical Sciences  
Division)

The Trustees of Princeton University

Princeton, New Jersey

19 AUG 1957

It is the desire of the Government and the Contractor that additional research in the field of non-linear differential equations be performed. To accomplish this, there are hereby provided an extension in the period of performance of Task Order Nonr-1858(04) and an increase in the estimated cost thereof.

In consideration of the foregoing, and subject to the Contractor's concurrent execution of Amendment Number 4 to Contract Nonr-1858(00), Task Order Nonr-1858(04), is hereby amended as follows:

1. At the top of the first page, under the list of Appropriations, add the following:

"17X1319.88 Research and Development, Navy  
(Expenditure Account 46032)  
(Object Classification 079)  
Bureau Control Number 80501  
Bureau Accounting Activity Number 14 - \$20,000.00."

2. At the top of the first page, delete the Estimated Cost in its entirety and substitute in lieu thereof the following:

"ESTIMATED COST: \$51,196.00."

3. Delete Section C in its entirety and substitute in lieu thereof the following:

"SECTION C - The estimated cost of the performance of this Task Order is fifty one thousand one hundred ninety six dollars (\$51,196.00)."

4. Effective as of the date of this amendment, add the following under Section D:

"Subject to the provisions of clause 33 of the contract, the following percentage shall be applied with respect to this Task Order in the amount or amounts, and for the period or periods, specified below:

ORIGINAL EXECUTED COPY



CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 1

Period for which Applied  
From \_\_\_\_\_ Through \_\_\_\_\_

61% provisionally of the salaries and  
wages reimbursed under Clause 18(a)(2)  
of the contract.

1 October 1956 30 June 1957."

5. Effective as of the date of this amendment, Section H shall read as follows:

"SECTION H - The Contractor is authorized to use the Government property for the performance of (1) any cost-type contract with the Office of Naval Research; (2) any fixed price contract with the Office of Naval Research provided that the Contractor has notified the Contracting Officer in writing of its intent to use the said property during negotiations relative to the said contract; and (3) such other Government contracts as are approved in writing by the Contracting Officer. The Contractor agrees that while the property is in its possession it will not use such property except as provided above."

6. Delete Section J in its entirety and substitute in lieu thereof the following:

"SECTION J - The performance of work under this Task Order shall be completed on 30 September 1958."

This amendment increases the total estimated cost of Task Order Nonr-1858(04) by \$20,000.00, which increase is chargeable against Appropriation 17X1319.88 Research and Development, Navy (Expenditure Account 46032) (Object Classification 079) Bureau Control Number 80501, Bureau Accounting Activity Number 14.

This amendment is made pursuant to 10 U. S. C. 2304(a)(5), and any required determination and findings with respect thereto has been made.



If the foregoing is acceptable to you please indicate your acceptance thereof by executing all three (3) copies of this amendment and return them to the Office of Naval Research for execution by the Government and the return of a fully executed amendment to you.

Executed by Contracting Officer on  
9/30/57 subsequent to  
 execution by Contractor.

THE UNITED STATES OF AMERICA

By

E. G. Bledsoe

**E. G. BLEDSOE**

(CONTRACTING OFFICER)

WITNESSES

CONTRACT REVIEWED FOR FISCAL  
 DATA AND SIGNATURES BY 10-1-57 WBR

By

Richard C. Meston

(CONTRACTOR)

NOTE.— In case of corporation, witnesses not required  
 but certificate below must be completed. Type or print  
 names under all signatures.

(TITLE)

(ADDRESS)

NOTE.—Contractor, if a corporation, should cause the following certificate to be executed under its corporate seal,  
 provided that the same officer shall not execute both the contract and the certificate.

CERTIFICATE

I, Robert L. Wokstone, certify that I am the  
Asst. Secretary of the corporation named as Contractor herein;  
 that \_\_\_\_\_, who signed this contract on behalf of  
 the Contractor, was then \_\_\_\_\_ of said corporation;  
 that said contract was duly signed for and in behalf of said corporation by authority of its governing body,  
 and is within the scope of its corporate powers.

Robert L. Wokstone

(SIGNATURE)

(CORPORATE SEAL)



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
CONTRACT NUMBER: Nonr-1858(04)

RESEARCH AND DEVELOPMENT TASK ORDER

APR 1 1956

CONTRACTOR: The Trustees of Princeton University

AUTHORITY: NR 043-942/1-16-56 (R&L) (Mathematical Sciences Division)

APPROPRIATIONS: 17X1319.58 Research and Development, Navy  
(Expenditure Account 46000)  
(Object Classification 079)  
Bureau Control Number 32000  
Bureau Accounting Activity Number 14 - \$7,446.00

17X1319.68 Research and Development, Navy  
(Expenditure Account 46032)  
(Object Classification 079)  
Bureau Control Number 80000  
Bureau Accounting Activity Number 14 - 23,750.00

ESTIMATED COST: \$31,196.00

This Task Order is established under, and constitutes a part of Contract Nonr-1858(00), which sets forth the basic contract provisions applicable hereto. In case of any conflict between the provisions of said Contract Nonr-1858(00) and the provisions hereof, the latter shall control.

SECTION A - The Contractor shall furnish the necessary personnel and facilities for and, in accordance with any instructions issued by the Scientific Officer or his authorized representative, shall conduct research in mathematical analysis with emphasis on fundamental research on non-linear differential equations with particular attention to non-linear oscillations.

SECTION B - The Scientific Officer under this Task Order is the Head, Mathematics Branch, Mathematical Sciences Division, Office of Naval Research.

SECTION C - The estimated cost of the performance of this Task Order is thirty one thousand one hundred ninety six dollars (\$31,196.00).

SECTION D - The percentage to be applied with respect to this Task Order in accordance with the provisions of clause 18(a)(6) of the contract shall be a fixed percentage, in the amount or amounts, and for the period or periods, specified below:

<u>%</u>	<u>Period for which Applied</u>	
	<u>From</u>	<u>To</u>
50%	1 April 1956	30 September 1956

ORIGINAL EXECUTED COPY



CONTRACT NUMBER: Nonr-1858(04)

SECTION E - All costs which have been incurred by the Contractor on and after 15 February 1956, in anticipation and prior to the signing of this Task Order, and which, if incurred after the signing of this Task Order, would have been considered as items of allowable cost hereunder, shall be deemed as items of allowable costs under this Task Order.

SECTION F - Restoration or rehabilitation rights accrued under Task Order V of Contract N6ori-105, but not satisfied or paid for thereunder, shall be deemed to have been accrued hereunder.

SECTION G - Vacation time earned or accrued under Task Order V of Contract N6ori-105, but not taken or paid for thereunder, shall be deemed to have been earned or accrued hereunder.

SECTION H - The Government Property provided or furnished pursuant to the terms of this Task Order may also be used by the Contractor for the performance of any Office of Naval Research contract.

SECTION I - The Contractor shall submit a final report upon completion of work hereunder, making full disclosures of all research conducted, and shall submit such other reports as are required by the Scientific Officer. In material submitted hereunder as technical reports, there shall be affixed to the front of the face page of each such technical report a statement to the effect that "reproduction in whole or in part is permitted for any purpose of the United States Government."

SECTION J - The performance of work under this Task Order shall be completed on 30 September 1957.

This Task Order is made pursuant to the provisions of Section 2(c)(5) of the Armed Services Procurement Act of 1947 (Public Law 413, 80th Congress), and any required Determination and Findings with respect thereto has been made.



IN WITNESS WHEREOF the parties hereto have executed this Task Order as of the day and year first above written.

UNITED STATES OF AMERICA

Executed by Contracting Officer on  
6/4/56. subsequent to  
 execution by Contractor.

BY

E. G. Bledsoe

Contracting Officer  
 Office of Naval Research  
 Department of the Navy

CONTRACT REVIEWED FOR FISCAL  
 DATA AND SIGNATURES BY 6/8/56 16  
 FOR COMPTROLLER, ONR

## WITNESSES:

(1) \_\_\_\_\_

THE TRUSTEES OF PRINCETON UNIVERSITY

Contractor

(2) \_\_\_\_\_

BY

Ricardo A. Mestres

Ricardo A. Mestres  
 Treasurer

NOTE: In case of a corporation  
 witnesses are not required  
 but certificate below must  
 be completed.

TITLE \_\_\_\_\_

\_\_\_\_\_  
 (Business address of Contractor)

## CERTIFICATE

Alexander Leitch

I, \_\_\_\_\_, certify that  
 I am the Secretary of the corporation named as Con-  
 tractor in the foregoing Task Order; that Ricardo A. Mestres who signed said  
 Task Order on behalf of the Contractor was then Treasurer  
 of said corporation; that said Task Order was duly signed for and in behalf  
 of said corporation by authority of its governing body and is within the  
 scope of its corporate powers.

Alexander Leitch

(Signature of person certifying)

Alexander Leitch Secretary

(CORPORATE SEAL)



CLEARANCE MEMORANDUM

NR 043-942/15 May 1957  
Contract Number: Nonr-1858(04)  
Amendment Number: 1

Unclassified

29 July 1957

The Trustees of Princeton University  
Princeton, New Jersey

1. Negotiations

Under this Task Order Princeton University has been performing services since about 15 February 1956, and the present completion date is 30 September 1957. Under date of 11 March 1957 Contractor submitted an approved written proposal requesting an extension of this Task Order and the allocation of additional funds thereto. Attached to and forming a part of its aforesaid proposal, Contractor submitted a proposed budget in respect to the requested extension.

From the technical point of view Contractor's proposal has received the approval of the Head, Mathematics Branch, Mathematical Sciences Division, Office of Naval Research, who, by Procurement Justification dated 15 May 1957, has made available \$20,000 of 1958 Navy research and development funds and has recommended that an appropriate amendment be negotiated.

2. Description of the Work

During the proposed period of extension there will be no change in the work description.

3. Analysis of the Costs

An analysis of the cost is as follows:

Project Leader, D. C. Spencer	\$ no charge
Prof. E.A. Coddington - half-time academic year	4,500
1 Professor (Bargmann or Coddington) summer 1958	2,000
Dr. D.L. Slotnick, Research Associate - quarter time academic year	1,250
2 Assistants in Research - academic year	4,500
1 Assistant in Research - summer 1958	900
	<hr/>
	\$13,150
Indirect expenses at 61%	8,020
	<hr/>
	\$21,170
Consulting (S. Lefschetz)	3,000
	<hr/>
	\$24,170
Communications, Shipping, etc.	830
	<hr/>
	\$25,000
Less anticipated carry-over of funds	5,000
	<hr/>
	\$20,000



CLEARANCE MEMORANDUM

NR 043-942/15 May 1957  
Contract Number: Nonr-1858(04)  
Amendment Number: 1

Unclassified

Page 2

The above budget contemplates the addition of Professor Coddington on a half-time basis which increases the personnel budget approximately \$4,500 annual. No charge is being made to this Task Order for the services of the project leader.

4. Overhead

Overhead is presently fixed at 50% of wages and salaries through 30 September 1956. This contract is a conversion and a continuation of an old contract. At the time of conversion the overhead rate had been fixed at 50% through 30 September 1956, and it was agreed that after 30 September 1956 the Task Order would carry the going rate and there would be no charge for the services of the project leader. Accordingly, the overhead rate will be set up on a provisional basis at 61% of wages and salaries for the period 1 October 1956 through 30 June 1957.

5. Period of Performance

It is proposed by this amendment to extend the completion date of this Task Order to 30 September 1958.

6. Other Pertinent Information


Contractor has heretofore submitted the required statement regarding the solicitation of this contract.

The basic contract will be reviewed to insure the inclusion of currently required clauses.

7. Reasonableness and Authority

In the opinion of the undersigned, the terms and conditions hereinabove set forth appear to be fair, reasonable, and in the interest of the Government.

Title 10 U.S.C. 2304(a)(5) is the authority for negotiating this amendment, for the reason that the contractual agreement is with an educational institution.

  
J. RICHMAN



Revised 1 November 1956

DETERMINATION AND FINDINGS

Method of Contracting

ONR D & F NO. 11519

Upon the basis of the following findings and determinations which I hereby make as a Contracting Officer pursuant to the provisions of the Armed Services Procurement Act, 10 U.S.C., Section 2310, and authority delegated thereunder, the proposed contract amendment may be entered into on a cost-reimbursement (without fee) or a cost-plus-a-fixed-fee basis, pursuant to the authority of Section 2306 of said Act, for research in the field of non-linear differential equations, with

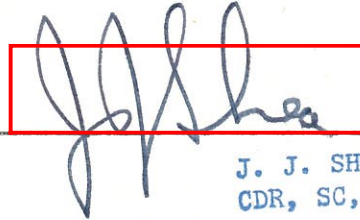
THE TRUSTEES OF PRINCETON UNIVERSITY

FINDINGS

1. The proposed contract amendment has an estimated cost of \$20,000.00. ~~plus a fixed fee of \$ , which is % of the estimated cost, exclusive of fixed fee.~~
2. The exact nature and extent of the work covered by the proposed contract amendment and the precise method of performing that work, cannot be established in advance, but must be freely subjected to improvisation and change as the work progresses.
3. The costs of performing the work under the proposed contract amendment cannot be accurately forecast so as to permit the undertaking of such work for a fixed price.

DETERMINATIONS

1. It is impracticable to secure services of the kind or quality required without the use of the proposed type of contract amendment.
2. The estimated cost of the proposed contract amendment ~~exclusive of the fee,~~ is \$ 20,000.00.



J. J. SHEA  
CDR, SC, USN

Contracting Officer  
Office of Naval Research  
Department of the Navy

19 AUG 1957



CLEARANCE MEMORANDUM

NR 043-942/1-16-56

Unclassified

Contract Number: N6ori-105

24 April 1956

Task Order: V

Amendment Number: 10

Contract Number: Nonr-1858(04)

The Trustees of Princeton University

Princeton, New Jersey

1. Negotiations

Under this Task Order, Princeton University has been performing services since 15 August 1946, and the present completion date is 30 September 1956. Under date of 27 January 1956, Contractor submitted an approved, written proposal requesting an extension of this Task Order for a further period of one year and the allocation of additional funds thereto.

From the technical point of view, Contractor's proposal has received the approval of the Head, Mathematics Branch, Mathematical Sciences Division, Office of Naval Research, who, by Procurement Justification dated 16 January 1956, has made available \$10,000.00 of 1956 R&D, Navy regular funds and \$10,000.00 of R&D, Navy longevity funds and has recommended that an appropriate amendment be negotiated.

This is a situation where it is proposed to cut back the presently existing Task Order to 31 March 1956, and to write a new contract (Nonr-1858(04)) to carry on the program. Both the Contractor and the New York Branch Office have advised that there may be recaptured from the old Task Order the sum of \$11,196.00 and the Branch Office has indicated the appropriations from which the money may be recaptured.

2. Description of the Work

The description of work in the new Task Order will be the same as that presently existing in the old one.

3. Analysis of the Cost

An analysis of the cost for the period from 1 October 1956 through 30 September 1957, is as follows:

Project Leader - A. W. Tucker	\$ No charge
Professor V. Bargmann - full time summer	1,750.00
Dr. L. Markus, Lecturer - half time academic year	2,500.00
full time summer	1,200.00
2 Graduate Student Assistants - half time academic year	1,000.00
	<u>\$ 9,450.00</u>



CLEARANCE MEMORANDUM  
NR 043-942/1-16-56

Unclassified  
Page 2

Contract Number: N6ori-105  
Task Order: V  
Amendment Number: 10

Contract Number: Nonr-1858(04)

Brought Forward	\$ 9,450.00
Indirect Expenses at <u>61%</u> (audited and approved rate 1955-56)	<u>5,764.00</u>
	\$15,214.00
S. Lefschetz, Consultant (\$50/day = 60 days)	<u>3,000.00</u>
	\$18,214.00
Miscellaneous - stenographic assistance, travel etc.	<u>1,786.00</u>
Total Estimated Cost	\$20,000.00
Recaptured Funds	\$11,196.00
New Funds	<u>\$20,000.00</u>
Total Est. Cost	\$31,196.00

4. Overhead

Under the old contract the overhead rate has been fixed at 50% of wages and salaries through 30 June 1947. Under the new contract the said rate of 50% will be fixed through 30 September 1956, and it is anticipated that thereafter the provisional rate will be 61%.

5. Period of Performance

A 145 day Anticipatory Cost clause will be included in the Task Order to cover the reimbursement of such cost as may have been incurred prior to 1 April 1956 and not billed at the present time. Completion date will be 30 September 1957.

6. Other Pertinent Information

Contractor has heretofore submitted the required statement regarding the solicitation of this contract.

The new Task Order will contain a section preserving Contractor's right to reimbursement for accrued vacations, if any, under Task Order V of Contract N6ori-105 as well as in regard to its restoration or rehabilitation rights.

7. Reasonableness and Authority

In the opinion of the undersigned, the terms and conditions hereinabove set forth, appear to be fair, reasonable and in the interest of the Government.

Section 2(c)(5) of the Armed Services Procurement Act is the authority for negotiating this amendment, for the reason that the contractual agreement is with an educational institution.

  
J. Richman



ADMINISTRATION AND INSPECTION  
(Assignment of Administration Duties)

DATE 1 April 1956

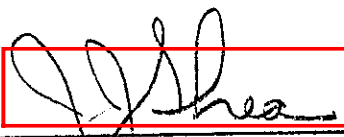
CONTRACT NO. Nonr-1353(04)

In order to facilitate the administration of the above referenced contract, the administration thereof is hereby assigned to the Commanding Officer, Office of Naval Research Branch Office,

346 Broadway - New York 13, New York

effective upon formal execution of the contract. The administration duties hereby assigned include appointment as the authorized representative and/or designee of the Contracting Officer, Office of Naval Research.

In the performance of these administration duties, and in acting as authorized representative and/or designee of the Contracting Officer, the Commanding Officer of the above ONR Branch Office, through his representatives as authorized by him, will maintain close contact with the Contractor in the administration of this contract. \* A copy of the ONR Contractors' Manual, NAVEXOS P-454, Office of Naval Research, Department of the Navy, is forwarded herewith to the Contractor for information and guidance.

  
Contracting Officer

\*Forwarded to your office on former contracts.



A Revised 20 May 1948

DETERMINATION AND FINDINGS

Method of Contracting

ONR D & F No. 9784

Upon the basis of the following findings and determinations which I hereby make as a Contracting Officer pursuant to the provisions of Section 7 of the Armed Services Procurement Act of 1947 and authority delegated thereunder, the proposed contract may be entered into on a cost basis, pursuant to the authority of Section 4(b) of said Act, for research in the field of non-linear differential equations, with

THE TRUSTEES OF PRINCETON UNIVERSITY

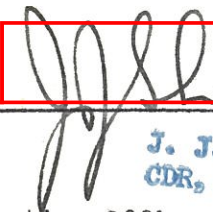
FINDINGS

1. The proposed contract has an estimated cost of \$ 31,196.00 , without any fixed fee.
2. Negotiation of the proposed contract is authorized under Section ~~2(c)(5)~~ 2(c)(5) of the Armed Services Procurement Act of 1947.
3. The exact nature and extent of the work covered by the proposed contract, and the precise method of performing that work, cannot be established in advance, but must be freely subject to improvisation and change as the work progresses.
4. The costs of performing the work under the proposed contract cannot be accurately forecast so as to permit the undertaking of such work for a fixed price.

DETERMINATIONS

1. It is impracticable to secure services of the kind or quality required without the use of the proposed type of contract.
2. The estimated cost of the proposed contract is \$31,196.00.

APR 1 1956

  
J. J. SMITH  
CDR, SC USN  
Contracting Officer  
Office of Naval Research  
Department of the Navy



CONTRACTOR (Name and Address)  <b>The Trustees of Princeton University</b>  <b>Princeton, New Jersey</b>	ADMIN. OFFICE  <b>ONR NEW YORK</b>
	DISBURSING OFFICE (Name and Account No.)  <b>60948</b>

CONTRACT IDENTIFICATION					
FIRM FIXED-PRICE	C	C(P)	F	CONTRACT NO. <b>Nonr- 1858 (04)</b>	AMENDMENT NO. <b>5</b>
	A	B			
COST TYPE	<b>X</b>			DOCUMENT TO BE DATED	NR NO.
OTHER (Specify)					

DESCRIPTION OF CONTRACTUAL SERVICES

**Overhead**

Note #1: Attach Individual Procurement Action Report form DD-350 as part of this Worksheet and fill in data as applicable.

Note #2: Review check-list below for completion of additional contract preparatory actions.

CHECK LIST OF PREPARATORY ACTIONS	REQUIRED		STATUS	
	YES	NO		
STATEMENT FROM CONTRACTOR RE USE OF COMPANY OR PERSON TO SOLICIT			<input type="checkbox"/> RECEIVED	<input type="checkbox"/> NOT RECEIVED
CONTRACTING OFFICER'S STATEMENT				
NEGOTIATION CLEARANCE (NAVEXOS-2759)			NO.	
AUTHORITY TO CONTRACT - "BUSINESS" CLEARANCE (NAVEXOS-2760)			NO.	
METHOD OF CONTRACTING (D & F)			NO.	\$
NEGOTIATION D & F			NO.	\$
RENEGOTIATION APPLICABLE TO THESE FUNDS				
SUBJECT TO VINSON-TRAMMEL ACT				
"FACILITIES" CONTRACT				
"EQUIPMENT (NO FUNDS)" CONTRACT				
FACILITIES SECURITY CLEARANCE				



ONR WORKSHEET FOR  
INDIVIDUAL PROCUREMENT ACTION REPORT (Report Symbol EXOS 4300-1)  
NAVEXOS 3596 (9-58)

CONTRACTOR (Name and Address)

The Trustees of Princeton University  
Princeton, New Jersey  
69372001  
280

ADMIN. OFFICE

Gr Bns 14-991

DISBURSING OFFICE (Name and Account No.)

60948 341

CONTRACT IDENTIFICATION

FIRM FIXED-PRICE	C	C(P)	F	CONTRACT NO.	AMENDMENT NO.
				Now 1858(04)	4
COST TYPE	A	B		DOCUMENT TO BE DATED	NR NO.
	✓			Currently	
OTHER (Specify)					

DESCRIPTION OF CONTRACTUAL SERVICES

Overhead

Note #1: Attach Individual Procurement Action Report form DD-350 as part of this Worksheet and fill in data as applicable.

Note #2: Review check-list below for completion of additional contract preparatory actions.

CHECK LIST OF PREPARATORY ACTIONS	REQUIRED		STATUS	
	YES	NO		
STATEMENT FROM CONTRACTOR RE USE OF COMPANY OR PERSON TO SOLICIT		✓	<input type="checkbox"/> RECEIVED	<input type="checkbox"/> NOT RECEIVED
CONTRACTING OFFICER'S STATEMENT		✓		
NEGOTIATION CLEARANCE (NAVEXOS-2759)		✓	NO.	
AUTHORITY TO CONTRACT - "BUSINESS" CLEARANCE (NAVEXOS-2760)		✓	NO.	
METHOD OF CONTRACTING (D & F)		✓	NO.	\$
NEGOTIATION D & F		✓	NO.	\$
RENEGOTIATION APPLICABLE TO THESE FUNDS		✓		
SUBJECT TO VINSON-TRAMMEL ACT		✓		
"FACILITIES" CONTRACT		✓		
"EQUIPMENT (NO FUNDS)" CONTRACT		✓		
FACILITIES SECURITY CLEARANCE		✓		
DD-254 (If required, identify: Basic; Amend.; Annex; Other)		✓		

Remarks

2/14

L. G. Hall 2/14/59

SIGNATURE AND DATE



ONR WORKSHEET FOR  
INDIVIDUAL PROCUREMENT ACTION REPORT (Form DD-350(7-58))  
NAVEXOS 3596(7-58)

Contractor (Name and Address) The Trustees of Princeton University (693720 01 Princeton, New Jersey (280)		Contract No. Nonr-1858(04)	Amendment No. ( 3 )	
		NR No. 043-942	Document to be dated 1 October 1958	
Admin. Office ONR BRO (991)	Disb. Off. Acct. No. 60948	TYPE OF ONR CONTRACT		
			C	C(P)
		Firm Fixed-Price		
Appropriation Code -		Cost Type	A X	B
		Other (Specify)		

Description of Contractual services  
Study in the field of Mathematics (04100)

1. Attach to this worksheet a draft of form DD-350(7-58) with items marked as applicable to specific contract.
2. Review check list below for completion of additional preparatory actions.

CHECK LIST

Actions	Required for this contract		Status
	YES	NO	
Statement from contractor re use of Company or person to solicit	X		<input checked="" type="checkbox"/> Received <input type="checkbox"/> Not Received
Contracting Officer's statement		X	
Negotiation Clearance (NAVEXOS 2759)		X	No.
Authority to Contract - "Business" Clearance		X	No.
Method of Contracting (D&F)		X	\$
Negotiation D&F		X	\$
Renegotiation applicable to (NO FUNDS) these funds		X	
Subject to Vinson-Trammel Act		X	
"Facilities" Contract		X	
"Equipment (No funds)" Contract		X	
Facilities Security Clearance		X	
DD-254 (If required, identify: Annex; Basic; Amendment; Other).		X	

Remarks:

10-31

L. O. Drucker 10-10-58  
Signature and date



OFFICE OF NAVAL RESEARCH, NEW YORK  
346 BROADWAY  
NEW YORK 13, NEW YORK

IN REPLY REFER TO *JH*

L4-3/1M/JNL:cs  
Nonr-1858(04)  
Ser 3983  
JUL 29 1958

From: Commanding Officer, Office of Naval Research, New York  
To: Chief of Naval Research (Code 432)  
Via: Code 430

Subj: Contract Nonr-1858(04) (NR 043-942) Princeton University,  
Princeton NJ - proposal for contract extension from 1 Oct 58  
thru 30 Sept 59 w/o additional funds; forwarding of

Encl: (1) Princeton U ltr /s/ R J Woodrow dtd 18 Jul 58 (orig & 2 cys)

1. Subject contract is concerned with research in the field of "Non-linear Differential Equations". The current completion date is 30 September 1958. The total amount of funds appropriated through 30 September 1958 is \$51,196.00. The total amount vouchered on the work through 30 April 1958 is \$38,755.00 resulting in a balance of \$12,441.00 available to continue the work through 30 September 1958. The expiring appropriation number is 17X1319.88 R&D Navy. Based on current expenditures and commitments, it appears that there will be sufficient funds to carry the work as requested in enclosure (1) through 30 September 1959.

2. It is therefore recommended that the contract be extended through 30 September 1959 with no additional funds.

L. F. DANZ  
By direction

Copy to:  
ONR Wash (Code 610) /w/ cy of encl (1) 



PRINCETON UNIVERSITY  
COMMITTEE ON PROJECT RESEARCH AND INVENTIONS  
P.O. BOX 172  
PRINCETON, N.J.

RAYMOND J. WOODROW  
Executive Officer and Secretary

July 18, 1958

LESLIE L. VIVIAN  
Assistant Executive Officer

Office of Naval Research  
Department of the Navy  
Washington 25, D. C.

VIA Office of Naval Research  
346 Broadway  
New York 13, New York

Attn: Code 430, Mathematics Branch Attn: Mr. J. H. Levy

Subject: Contract Nonr 1858(04)


Gentlemen:

The purpose of this letter is to request that the subject contract be extended for the period of one year beyond the present completion date of September 30, 1958 without increase in contract funds.

This request is made in behalf of Prof. A. W. Tucker on the basis that the financial balance anticipated as of September 30, 1958 will be adequate to support the activity which the Department of Mathematics would like to continue under this contract. Specifically, Prof. Lefschetz will be in Princeton on a regular basis this fall, and will have an opportunity to prepare a terminal report. Funds will be adequate for report preparation and consultant charges. Extension of the contract period will also provide further time for consideration of a continuing program of research on Differential Equations Studies.

Your consideration of this request will be appreciated. Please let us know if there are any questions.

Yours very truly,

  
for Raymond J. Woodrow  
Executive Officer

RJW/SK/dkw

cc: Prof. A. W. Tucker  
File A-904

*Handwritten note:* L. L. Vivian 6-17-58



NAVEXOS-3234 (3-58)

SEC. CLASS. OF P. J. 1002

(A) PRINCIPAL INVESTIGATOR (Name and Department)  
 Prof. A. W. Tucker, S. L. Lacheta, Math.

### 13. ONR TASK SUPERVISOR

15. **JUSTIFICATIONS.** See attached statement prepared to conform with Instructions on reverse of Continuation Sheet (Navexos-3234A).

PAST 

17. REMARKS

18. SOURCE OF FUNDS  
FOR THIS P. J.\*  
(See Item No. 4 above)

ONR

### OTHER AGENCIES

19. OTHER CODES CON-	20. LONGEVITY ANNUAL	22. AMOUNT APPROVED	ONR COMPTROLLER (Signature and Date)
----------------------	----------------------	---------------------	--------------------------------------



JUSTIFICATION STATEMENT

Include paragraph Subheads 1, 2, 3 and 4 as listed in Instructions on reverse. Use of Subhead 5 is optional.

1. This research concerns itself with existence and uniqueness questions relating to solutions (possessing certain characteristic properties such as boundedness, stability, periodicity, etc.) of nonlinear differential equations. Particular attention is being paid to the periodic solutions and their behavior, i.e. the so-called nonlinear oscillations such as relaxation oscillations, parasitic and self-excited oscillations, sub-harmonic resonance phenomena, etc. The following areas are also being investigated: the relation of differential equations and global differential geometry, the stability of Hamiltonian systems, and differential equations with almost periodic coefficients.

2. The study of nonlinear differential equations, and nonlinear phenomena in general is one of the most important activities of current mathematical research and has therefore established itself as an integral part of the field of functional analysis. In a report to the Basic Physical Sciences Committee of the RUS, the sub-panel on Mathematics and Statistics singled out nonlinear mechanics as one of the specific fields in which further expansion of the supported research program was required in view of the large number of current scientific problems of military importance that have arisen because of the more accurate information required in modern warfare, and therefore calling for increased knowledge in this field. This task contributes directly to meeting this need.

3. Research will be undertaken on several aspects of the theory and behavior of nonlinear differential equations and their solutions.

4. This is the continuation of a satisfactory project.

5. Lack of personnel has resulted in a lower level of research during the past year than originally anticipated. There remain sufficient funds for support of an additional year's research at a reduced level, and the preparation of a final summary report covering 13 years of active research in this very important area of mathematics.



OFFICE OF NAVAL RESEARCH, NEW YORK  
346 BROADWAY  
NEW YORK 13, NEW YORK

IN REPLY REFER TO

L4-3/1N/UHL:cs  
Nonr-1858(04)  
Ser 3983

JUL 29 1958


From: Commanding Officer, Office of Naval Research, New York  
To: Chief of Naval Research (Code 432)  
Via: Code 430

Subj: Contract Nonr-1858(04) (NR 043-942) Princeton University,  
Princeton NJ - proposal for contract extension from 1 Oct 58  
thru 30 Sept 59 w/o additional funds; forwarding of

Encl: (1) Princeton U ltr /s/ R J Woodrow dtd 18 Jul 58 (orig & 2 cys)

1. Subject contract is concerned with research in the field of "Non-linear Differential Equations". The current completion date is 30 September 1958. The total amount of funds appropriated through 30 September 1958 is \$51,196.00. The total amount vouchered on the work through 30 April 1958 is \$38,755.00 resulting in a balance of \$12,441.00 available to continue the work through 30 September 1958. The expiring appropriation number is 17X1319.88 R&D Navy. Based on current expenditures and commitments, it appears that there will be sufficient funds to carry the work as requested in enclosure (1) through 30 September 1959.

2. It is therefore recommended that the contract be extended through 30 September 1959 with no additional funds.

  
L. F. DANZ  
By direction

Copy to:  
ONR Wash (Code 610) /w/ cy of encl (1)



Amount this

Amount this action\$ 20,000.00

Amount total prior to  
this action: \$ 31,196.00

28

## non-linear differential equations

## Contract Placement:

- ☐ (1) Interservice  
☐ (2) Interdepartmental  
☐ (3) Advertised  
☒ (4) Negotiated

- Type of Organization:

(1) Educational  
(2) Non-profit  
(3) Commercial

- Type of Contract:






- Other (Specify)

- Contract Purpose:

ONR New York

(1) Supply  
(2) Professional Services  
(3) Construction (Real Property)  
(4) Research, Development and Experimental  
(5) Personal Services  
(6) Facilities  
(7) Non-personal Services

17X1319.88 Research & Development, Navy

Naval District THIRD

YES

Have not ☒

### Method of Contracting D&F (Cost)

X

X Renegotiation applicable to these funds

<input checked="" type="checkbox"/>	Confidential	(Amend.
<input checked="" type="checkbox"/>	Secret	(Annex
		(Other

X Subject to Walsh-Healey Act; if yes, Manufacturer // Dealer //

X Synopsis of Procurement - ASPR 2-206 and 3-106

If Authority other than ASPR, specify:

NEGOTIATORX

RTIC HUMAN



## NAVEX -3234 (3-54)

SEC. CLASS **Unclassified**

15. **JUSTIFICATION.** See attached statement prepared to conform with Instructions on back of this form.

17. REMARKS

RESEARCH APPROVALS	
BRANCH HEAD (Signature and Date)	BRANCH (Name and Code)
ARTHUR CHAD 5-16-57	Mathematics, Code 132
DIVISION DIRECTOR (Signature and Date)	DIVISION (Name and Code)
F. JOACHIM WEXL	Mathematical Sciences, Code 130
SCIENCE DIRECTOR (Signature and Date)	ASSISTANT CHIEF FOR RESEARCH (Signature and Date)
B. ROBERTSON	G. E. HART

### 3. FINANCE DIVISION—CONTRACT-PRO



(1) Task Description

This research concerns itself with existence and uniqueness questions relating to solutions (possessing certain characteristic properties such as boundedness, stability, periodicity, etc.) of nonlinear differential equations. Particular attention is being paid to the periodic solutions and their behavior, i.e. the so-called nonlinear oscillations such as relaxation oscillations, parasitic and self-excited oscillations, sub-harmonic resonance phenomena, etc. The following areas are also being investigated: the relation of differential equations and global differential geometry, the stability of Hamiltonian systems, and differential equations with almost periodic coefficients.

(2) Justification

The study of nonlinear differential equations, and nonlinear phenomena in general is one of the most important activities of current mathematical research and has therefore established itself as an integral part of the field of functional analysis. In a report to the Basic Physical Sciences Committee of the RNE, the sub-panel on Mathematics and Statistics singled out nonlinear mechanics as one of the specific fields in which further expansion of the supported research program was required in view of the large number of current scientific problems of military importance that have arisen because of the more accurate information required in modern warfare, and therefore calling for increased knowledge in this field. This task contributes directly to meeting this need.

Three outstanding mathematicians, Professors S. Lefschetz, D. Spencer, and E. Coddington (visiting from U.C.L.A.), will be the senior members of the project. It is expected that their connection with the project will provide a strong scientific stimulus.

(3) Contract Description of Work

Research will be undertaken on several aspects of the theory and behavior of nonlinear differential equations and their solutions.

(4) Basis for Selection of Contractor

The strength of Princeton University's Department of Mathematics is an important factor in assuring the availability of highly qualified mathematicians for work on this task. In addition, gifted young mathematicians and students of mathematics are working in this stimulating atmosphere on the characteristically difficult problems in this field.

(5) Other Considerations

None



226870

## OFFICE OF NAVAL RESEARCH, NEW YORK

346 BROADWAY

NEW YORK 13, NEW YORK

IN REPLY REFER TO

L4-3/1N/JHL:cs  
Nonr-1858(04)  
Ser 1790

MAR 26 1957

From: Commanding Officer, Office of Naval Research, New York  
To: Chief of Naval Research (Code 432)  
Via: Code 430

Subj: Contract Nonr-1858(04) (NR-043-942) Princeton University,  
Princeton NJ - Proposal for contract extension from 30  
September 1957 through 30 September 1958; forwarding of

Encl: (1) Princeton U ltr /s/ L L Vivian dtd 11 Mar 57 /w/3  
cys of extension proposal dtd 4 Mar 57

1. Subject contract is concerned with research in the field on "Non-Linear Differential Equations". The current expiration date is 30 September 1957. The total amount of funds appropriated through 30 September 1957 is \$31,196.05. The total amount vouchered on the work through 31 December 1956 is \$13,995.00 which results in a balance of \$17,201.00 available for the work through 30 September 1957. The expiring appropriation number is 17X1319.68 R&D Navy. Based on current expenditures and commitments, it appears that \$5,000.00 of current funds will be unexpended as of current expiration date 30 June 1957. This amount is under the above appropriation and has been credited to the extension period budget (enclosure 1).

2. The proposed budget (enclosure 1) contemplates the addition of Professor Coddington on a half-time basis which increases the personnel budget approximately \$4,000.00 annually. The Scientific Officer is fully cognizant of the progress and value of the research work on this contract; therefore, no further comment is made on that subject.

3. The budget items (enclosure 1) appear reasonable and in accordance with current rates. It is recommended that the contract be extended through 30 September 1958 with increased funds as are available.

L. F. DANZ  
By direction

Copy to:  
ONR Wash (Code 610)  
/w/cy encl (1)



OFFICE OF NAVAL RESEARCH, NEW YORK  
346 BROADWAY  
NEW YORK 13, NEW YORK

226870

432

IN REPLY REFER TO

L4-3/1N/JHL:cs  
Nonr-1858(04)  
Ser 1790

MAR 26 1957

From: Commanding Officer, Office of Naval Research, New York  
To: Chief of Naval Research (Code 432)  
Via: Code 430


Subj: Contract Nonr-1858(04) (NR-043-942) Princeton University,  
Princeton NJ - Proposal for contract extension from 30  
September 1957 through 30 September 1958; forwarding of

Encl: (1) Princeton U ltr /s/ L L Vivian dtd 11 Mar 57 /w/3  
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L. F. DANZ  
By direction

Copy to:  
ONR Wash (Code 610)  
/w/cy encl (1)

28 MAR 1957



PRINCETON UNIVERSITY

COMMITTEE ON PROJECT RESEARCH AND INVENTIONS

P.O. BOX 172

PRINCETON, N.J.

RAYMOND J. WOODROW  
Executive Officer and Secretary

LESLIE L. VIVIAN  
Assistant Executive Officer

March 11, 1957

Code 430, Mathematics Branch  
Office of Naval Research  
Department of the Navy  
Washington 25, D. C.

-VIA-

Commanding Officer  
Office of Naval Research  
346 Broadway  
New York 13, New York

Attention: J. H. Levy

Subject: Contract Nonr-1858(04)

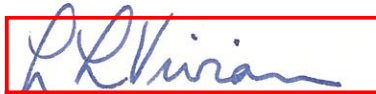
Dear Sir:

Please find attached five (5) copies of our proposal for the extension of studies on Non-Linear differential equations. Work on this program is currently in process through September 30, 1957 under the subject contract. The attached proposal requests a one year extension of this work through September 30, 1958 at an additional cost of \$20,000.

The Trustees of Princeton University represents that it has not employed or retained a company or person (other than a full time employee) to solicit or secure this contract, and agrees to furnish information relating thereto as requested by the Contracting Officer.

We look forward to hearing from you after you have had an opportunity to review this proposal.

Yours very truly,

  
L. L. Vivian

LLV/jk  
enclosure

CC: Math. Branch, ONR, Wash. (w/encl)  
Prof. D. C. Spencer (w/encl)  
Mrs. A. Henry (w/encl)

28 MAR 1957

encl (1)



PRINCETON UNIVERSITY  
Princeton, New Jersey

Department of Mathematics

PROPOSAL FOR EXTENSION OF PROJECT ON NON-LINEAR DIFFERENTIAL EQUATIONS

Covered By

CONTRACT Nonr-1858(04), PROJECT NO. NR043-942

This is a request for a year's extension of the Project on "Non-Linear Differential Equations" covered by NR043-942, Contract Nonr-1858(04), which was initiated April 1, 1956 and expires September 30, 1957.

The Project is continuing during the present year with the following young mathematicians: Dr. Lawrence Markus (with us as Lecturer for a second year), Dr. Joseph Kohn (Instructor), Dr. David Slotnick (one-quarter time - Instructor at Rutgers University) and two graduate student assistants, J. C. Lillo and James McKenna. Professor S. Lefschetz served as consultant during the Fall Term.

Markus has continued his researches on the relation of differential equations and global differential geometry. He extends some of the results of the calculus of variations to non-conservative physical systems and has presented his ideas in our seminar as well as before the American Mathematical Society.

Slotnick has just completed a most interesting problem concerning the stability of Hamiltonian systems. He is developing his ideas to apply to systems with several degrees of freedom, in particular, to the geometry of differential systems in higher dimensions than two.

Kohn has worked on potential theory on various types of Riemannian manifolds. He recently was a visiting lecturer at Stanford University for the first week of the Spring Term.

Also the two graduate students on the project have attended our seminar regularly and have derived corresponding profit. Mr. Lillo has almost completed his thesis on stability and oscillation properties of differential equations with almost periodic coefficients. Mr. McKenna has developed a strong interest in partial differential equations and will probably write his thesis on an application of this theory to some branch of physics.

The plan for the forthcoming year is to bring Dr. Earl A. Coddington here as Visiting Associate Professor, half-time on the Project and half-time teaching. Coddington, co-author with N. Levinson (M.I.T.) of *THEORY OF ORDINARY DIFFERENTIAL EQUATIONS* (McGraw-Hill 1955) and now Associate Professor of Mathematics at U.C.L.A., is one of the outstanding mathematicians in this country in the field of differential equations. We feel that he will provide a strong scientific stimulus in the work of the Project.

Professor S. Lefschetz will continue to be associated with the project as consultant, and will spend the Fall Term, 1957, at Princeton University, actively working with the Project. In addition, Dr. David Slotnick will continue one-quarter time as Research Associate, and it is planned to have two graduate students as Assistants in Research (probably J. McKenna and L. C. Mejlbo.)



Finally, Professor D. C. Spencer of Princeton University will serve as Project Leader (at no charge to the Project).

Proposed Budget for period 10/1/57 - 9/30/58

Project Leader, D. C. Spencer	\$ No charge
Professor Earl A. Coddington - half-time academic year	4 500 00
One Professor (Bargmann or Coddington) summer 1958	2 000 00
Dr. D. L. Slotnick, Research Assoc. quarter-time academic year	1 250 00
Two Assistants in Research - academic year	4 500 00
One Assistant in Research - summer 1958	900 00
	<hr/>
	\$ 13 150 00
Indirect expenses at 61 percent	8 020 00
	<hr/>
	\$ 21 170 00
Consulting (S. Lefschetz)	3 000 00
	<hr/>
	\$ 24 170 00
Communications, Shipping, etc.	830 00
	<hr/>
	\$ 25 000 00
Less anticipated carry-over of funds	5 000 00
	<hr/>
	\$ 20 000 00

March 4, 1957



CONTRACT NEGOTIATION DATA  
NAVECOS-3596

Contr's. Name & Address:	The Trustees of Princeton University Princeton, New Jersey	Amount this action: \$ 31,196.00 Amount total prior to this action: \$ --
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NR Number 043-942	Contract No. Nonr-1858(04)	Amend. No. -	Completion Date 30 September 1957	Document to be dated 1 April 1956
----------------------	-------------------------------	-----------------	--------------------------------------	--------------------------------------

Short Title of Research: Non-Linear differential equations

<p>Small Business:</p> <p>(a) Contractor is <input type="checkbox"/> (1) Large Business firm <input checked="" type="checkbox"/> (2) Small Business firm <input type="checkbox"/> (3) Outside U. S. &amp; Possessions</p> <p>(b) If Contractor is Large Business firm, check one of following:</p> <p>Small Business not asked to bid because</p> <p><input type="checkbox"/> (1) No known Small Business Source</p> <p><input type="checkbox"/> (2) Sole Sources (large)</p> <p>Small Business had opportunity to bid, but</p> <p><input type="checkbox"/> (3) No bid received from Small Business</p> <p><input type="checkbox"/> (4) Low bid was not from Small Business</p> <p><input type="checkbox"/> (5) Low bid from Small Business not res- ponsive</p> <p><input type="checkbox"/> (6) Low bid from Small Business rejected on basis of pre-award survey</p>	<p>Contract Placement:</p> <p><input type="checkbox"/> (1) Interservice</p> <p><input type="checkbox"/> (2) Interdepartmental</p> <p><input type="checkbox"/> (3) Advertised</p> <p><input checked="" type="checkbox"/> (4) Negotiated</p> <p>Type of Organization:</p> <p><input checked="" type="checkbox"/> (1) Educational</p> <p><input type="checkbox"/> (2) Non-profit</p> <p><input type="checkbox"/> (3) Commercial</p> <p>Type of Contract:</p> <p><input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> C(P)</p> <p><input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G</p> <p>Other (specify) _____</p>
--	---

<p>Administrative Office: (specify)</p> <p>ONR, New York</p> <p>Local Administrator: (specify)</p>	<p>Contract Purpose:</p> <p><input type="checkbox"/> (1) Supply</p> <p><input type="checkbox"/> (2) Professional Services</p> <p><input type="checkbox"/> (3) Construction (Real Property)</p> <p><input checked="" type="checkbox"/> (4) Research, Development and Experimental</p> <p><input type="checkbox"/> (5) Personal Services</p> <p><input type="checkbox"/> (6) Facilities</p> <p><input type="checkbox"/> (7) Non-personal Services</p>
<p>Appropriation Data:</p> <p>17X1319.58 R&amp;D, Navy - \$7,446.00</p> <p>17X1319.68 " " - 23,750.00</p>	
<p>Disbursing Office Accounting # 60948</p> <p>Naval District Third</p>	

NO	Statement from Contractor re use of company or person to solicit	YES
	Have <input type="checkbox"/> Have Not <input checked="" type="checkbox"/>	X
X	Contracting Officer's Statement	
X	Business Clearance (NavExos-2760)	
	Method of Contracting D & F (cost) 9784	X
X	Negotiation D & F	
X	Government-furnished Property	
X	Renegotiation applicable to these funds	
X	Classified: DD 254 Dtd _____; <input type="checkbox"/> Confidential <input type="checkbox"/> Secret	
X	Subject to Vinson-Trammel Act	
X	Subject to Walsh-Healey Act; if yes: Manufacturer <input type="checkbox"/> Dealer <input type="checkbox"/>	
X	Facilities Clearance	
X	Synopsis of Procurement - ASPR 2-206 and 3-106	

ASPR Authority: 2(c)(5)  
If authority other than ASPR, specify: \_\_\_\_\_

NEGOTIATOR

J. Michman



1. INITIATING BRANCH (Code and Name) <b>Mathematics Branch</b>		Code <b>432</b>		2. SECURITY CLASSIFICATION OF TASK <input checked="" type="checkbox"/> UNCLASSIFIED <input type="checkbox"/> DD254 DATED <u>Revised</u>	
3. TASK NO. <b>NR 043-942</b>		4. CONTRACT IDENTITY* (Agency and Number) <b>NSORI 10506</b> <i>104</i>		5. PROJECT NO. <b>NR 043-000</b>	
6. OP. REQUIREMENT NO. <b>NR 01800</b> <i>8-32</i> <i>86-1</i>		7. SHORT TITLE OF TASK <b>Non-Linear Differential Equations</b> <i>now-1858 (04)</i>			
8. PROJECT TITLE <b>Theoretical Mathematics</b>				9. CONTRACTOR TO PERFORM WORK (Name and Address) <b>Princeton University</b> <b>Princeton, New Jersey</b> <i>9784</i>	
10. TYPE OF P. J. (Select one and write in: New; Renewal; Reduction-Amount; Reduction-Time; Over-run; Re-opened; Short Term; Acceleration; No Funds Extension; Material Procurement) <b>Renewal</b>				11. BEGINNING DATE OF TASK <b>15 Aug. 1946</b>	
12. ENDING DATE OF TASK <b>Continuing</b>				13. ONR TASK SUPERVISOR <b>Dr. Robert H. Owens</b>	
14. PERIOD COVERED BY THIS P. J. (Dates) FROM <b>1 Oct. 1956</b> TO <b>30 Sept. 1957</b>				15. JUSTIFICATION. See attached statement prepared to conform with Instructions on back of this form.	

16. FUNDS COMMITTED ON THIS TASK	FY	ONR	ALL OTHER	FUNDS COMMITTED ON THIS TASK	FY	ONR	ALL OTHER
PAST <b>Total</b>		\$ <b>154,775</b>	\$	PAST	<b>55</b>	\$ <b>10,000L</b> <b>10,000R</b>	\$
PAST	<b>54</b>	<b>10,000L</b> <b>10,000R</b>		CURRENT (Other than this P. J.)			

17. REMARKS



(1) Task Description

This research concerns itself with existence and uniqueness questions relating to solutions (possessing certain characteristic properties such as boundedness, stability, periodicity, etc.) of non-linear differential equations.. Particular attention is being paid to the periodic solutions and their behavior, i.e. the so-called non-linear oscillations such as relaxation oscillations, parasitic and self-excited oscillations, sub-harmonic resonance phenomena, etc. Also an investigation of singularities of systems of third and higher order has just gotten under way.

(2) Justification

The study of non-linear differential equations, and non-linear phenomena in general is one of the most important activities of current mathematical research and has therefore established itself as an integral part of the field of functional analysis. In its report of 1 October 1949 to the Basic Physical Sciences Committee of the RDB, the sub-panel on Mathematics and Statistics singled out non-linear mechanics as one of the specific fields in which further expansion of the supported research program was required in view of the large number of current scientific problems of military importance that have arisen because of the more accurate information required in modern warfare, and therefore calling for increased knowledge in this field. This task is one of several ONR tasks which contribute directly to meeting this need.

The many important contributions made under this task have laid the groundwork for an investigation of singularities of systems of third and higher orders. This particular phase is a vast one and, along with the other phases of this task, is stimulated by the occasional presence of Professor Emeritus S. Lefschetz, who acts as a consultant and continues to attract brilliant students to this area of research.

(3) Contract Description of Work

Research will be undertaken on several aspects of the theory and behavior of non-linear differential equations and their solutions.

(4) Basis for Selection of Contractor

The strength of Princeton University's Department of Mathematics is an important factor in assuring the availability of highly qualified mathematicians for work on this task. In addition, gifted young mathematicians and students of mathematics are working in this stimulating atmosphere on the characteristically difficult problems in this field.

(5) Other Considerations

None



188406

430  
432

PRINCETON UNIVERSITY  
COMMITTEE ON PROJECT RESEARCH AND INVENTIONS  
PRINCETON, N.J.

RAYMOND J. WOODROW  
Executive Officer and Secretary

LESLIE L. VIVIAN  
Assistant Executive Officer

January 27, 1956

Mathematics Branch  
Office of Naval Research  
Department of the Navy  
Washington 25, D. C.

Subject: Contract N6ori-105 T.O. 5 -- Project NR 043-942


Gentlemen:

Reference is made to letter received from Arthur Grad dated 19 January 1956 relative to the question of the Princeton University proposal submitted by our letter of January 12, 1956.

In accordance with Mr. Grad's request, please find attached a revised proposal requesting your support of the non-linear differential equation program for the period October 1, 1956, through September 30, 1957, at the rate of \$20,000.

It is hoped that this proposal will clarify any questions which may arise, but please feel free to call upon us if any further details are needed. Thank you for your interest and help in this problem.

Yours very truly,



Raymond J. Woodrow

RJW:Vp

Enclosures: 5

cc: ONR, N.Y. (w/encl)  
A. W. Tucker (w/encl)  
S. Lefschetz (w/encl)  
H. Search (w/encl)

30 JAN 1956



Princeton University  
Princeton, New Jersey

Department of Mathematics

PROPOSAL FOR EXTENSION OF PROJECT ON NON-LINEAR DIFFERENTIAL  
EQUATIONS, COVERED BY NRO43-942, CONTRACT N6-ORI-105, TASK V

This is a request for a year's extension of the project on "Non-Linear Differential Equations" covered by NRO43-942, Contract N6ori-105, Task Order V, which was initiated August 15, 1946 and expires under the present contract September 30, 1956.

The project is continuing during the present year under the most promising auspices. It has been joined by three most active young mathematicians: Dr. Lawrence Markus of Harvard and Yale, Dr. Robert Bass of Johns Hopkins, and Mr. Samuel Barocio of Mexico City.

Markus has already done excellent research work notably on the complete phase-portrait in the Euclidean plane. He also has a vast knowledge of differential equations in all phases and is constantly helping his junior colleagues in their difficulties. Bass has a very thorough grasp of the problems related to controls, and also on the applications of the very difficult and highly interesting Schauder-Leray technique. Barocio has completed a thesis in Mexico City on the complete description of planar analytical critical points and is attacking three dimensional isolated vertical points.

In addition we may mention Mr. J.C. Lillo, who is associated with the group and continues research initiated before he came here, on equations of pendulum type (cylindrical phase-space). Mr. Mendelson, who continues as member of the Project, is writing a thesis on three dimensional critical points. Professor Bargmann is continuing his work on eigen values of linear systems. Professor Lefschetz continues to act as consultant on the work on critical points.

Our plan for the forthcoming year is to continue the general research on higher critical points, likewise the work of Lillo, also to maintain the exceptionally active seminar which will enter into its sixteenth year. We expect to keep Dr. Marcus, and would also continue Dr. Bass, were it not that he will almost certainly obtain a post-doctoral National Science Foundation fellowship. If he is awarded an NSF Fellowship, he plans to stay in Princeton and continue in association with the Project.

Proposed Budget

Project Leader, A.W. Tucker	\$	No charge
Professor V. Bargmann - full time summer		1,750
Dr. L. Markus, Lecturer - half time academic year		2,500
full time summer		1,200
Two Graduate Student Assistants -		
half time academic year		4,000
		<u>9,450</u>
Indirect expenses at 61% (audited and approved rate for 1955-56)		5,764
		<u>15,214</u>
S. Lefschetz, Consultant (\$50/day - 60 days)		3,000
		<u>18,214</u>
Miscellaneous - stenographic assistance, travel, etc.		1,786
TOTAL . . . . .	\$	20,000

mg

J-1627-56



Princeton University  
Princeton, New Jersey

Department of Mathematics

PROPOSAL FOR EXTENSION OF PROJECT ON NON-LINEAR DIFFERENTIAL  
EQUATIONS, COVERED BY NRO43-942, CONTRACT N6-ORI-105, TASK V

This is a request for a year's extension of the project on "Non-Linear Differential Equations" covered by NRO43-942, Contract N6ori-105, Task Order V, which was initiated August 15, 1946 and expires under the present contract September 30, 1956.

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full time summer		1,200
Two Graduate Student Assistants -		
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		<hr/> 9,450
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		<hr/> 15,214
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		<hr/> 18,214
Miscellaneous - stenographic assistance, travel, etc.		1,786
TOTAL. . . . .	\$	20,000

mg

J-1627-56



Princeton University  
Princeton, New Jersey

Department of Mathematics

PROPOSAL FOR EXTENSION OF PROJECT ON NON-LINEAR DIFFERENTIAL  
EQUATIONS, COVERED BY NRO43-942, CONTRACT N6-ORI-105, TASK V

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S. Lefschetz, Consultant (\$50/day - 60 days)		3,000
		<hr/> 18,214
Miscellaneous - stenographic assistance, travel, etc.		1,786
TOTAL. . . . .	\$	20,000

mg

J-1627-56







PRINCETON UNIVERSITY  
COMMITTEE ON PROJECT RESEARCH AND INVENTIONS

RAYMOND J. WOODROW  
Executive Officer and Secretary

PRINCETON, N.J.

January 12, 1956

Mathematics Branch  
Office of Naval Research  
Department of the Navy  
Washington 25, D.C.

-via-

Commanding Officer  
Office of Naval Research  
346 Broadway  
New York 13, New York

Subject: Contract N6ori-105, Task V, Project NR 043-942

Gentlemen:

As requested in your letter Serial 26220, dated November 21, 1955, Princeton University is pleased to forward herewith five copies of our proposal for a one year extension of research on non-linear differential equations covered by the above referenced contract for the period beginning October 1, 1956.

You will note that the indirect expense rate (overhead) in the budget is now quoted at 61% of salaries and wages, which is the Government audited and approved rate for our on-campus research for 1955-56. As a basis for the change to the full audited rate from our past practice of accepting in this contract a somewhat lower rate, we should like to point out that the indirect expenses which Princeton incurs in carrying out its various sponsored research projects have now become so large, and the demands on our unrestricted general funds have now so exceeded the supply, that we cannot any longer divert general fund income to share the costs of indirect expenses properly allocable to sponsored research. We have decided, in other words, that each sponsored research project should carry its fair share of indirect expenses to avoid giving preferential treatment to some sponsors or to some of our departments. This does not mean, however, that the University will not contribute to sponsored research. The very fact that University personnel and facilities will be devoted to the research is of itself a substantial contribution. Normally also the University makes no charge for the research time of faculty members who are carrying a full teaching and administrative schedule, together with associated indirect expenses. Other contributions will also occasionally be made, to the extent that the department concerned has and can make available departmental research funds.

As a result of the above, the total budget for this project which has previously been operating at a rate of \$20,000 per year, except for certain expansions, as during the last fiscal year is now increased to \$21,000.

043-942



Mathematics Branch  
ONR, Washington  
-via-  
ONR, New York

- page two -

January 5, 1956  
Nyori-105, Task V

We believe that the results which have been achieved by this project, and those which can be expected during the future year, would fully warrant such a budget. We would appreciate, therefore, your consideration of our proposal at the \$21,000 figure.

The Trustees of Princeton University represents that it has not employed or retained a company or person (other than a full time employee) to solicit or secure this contract, and agrees to furnish information relating thereto as requested by the Contracting Officer.

Sincerely yours,

Raymond J. Woodrow  
Executive Officer and Secretary

Committee on Project Research  
and Inventions

mg  
enclosures

c.c. Math. Branch, ONR, Wash.  
Prof. A.W. Tucker  
Mrs. H. Search







WEEK LIST FOR DISTRIBUTION OF ONR CONTRACTS  
AVEXOS 4381 (REV. 4-61)

CONTRACT NO. <b>NDNR-1858(04)</b>		AMENDMENT NO. <b>6</b>		DISTRIBUTION DATE <b>22 MAR 1962</b>		DOCUMENT DATE <b>26 FEB 1962</b>	
COPY DISTRIBUTION REQUIREMENTS							
GENERAL		THIS CONTRACT		GENERAL		THIS CONTRACT	
NAME OF ACTIVITY	NO. OF COPIES	ACTIVITY	DISTRIB-UTED	NAME OF ACTIVITY	NO. OF COPIES	ACTIVITY	DISTRIB-UTED
GAO (original - with D and F)				CONTRACT ADMINISTRATION			
				BRANCH OFFICE <b>NY</b>	<b>3</b>		
DISBURSING				INM	3		
NRAO <b>3rd</b>	<b>1</b>			BAR	3		
NRL - WASH., D. C. (1 Original)	5			BUWEPS REPR.	3		
DTMB (S.B.)							
COMPTROLLERS				OTHER			
BUSHIPS	1			BUSANDA F4-11	1		
BUWEPS	1			BUSANDA OD-4 (on DRO)	1		
BUSANDA	1						
BUMED	1			ONM INSURANCE BRANCH	<b>1</b>		
BUDOCKS	1						
MARINE CORPS	1			NAVCOMP - CONTRACT AUDIT	1		
AIR FORCE	3			NAAO <b>NY</b>	<b>1</b>		
ARMY	3						
				BUSHIPS, SPECIAL PROJECTS, NAVY MANAGEMENT FUND	1		
ONR - INTERNAL (by Code No.)							
106	<b>1</b>						
322	<b>1</b>						
402S	<b>1</b>						
440	2						
603 - (Overhead documents)	<b>1</b>						
640 - (Facilities only)	1						



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: *None - 1858(04)*  
NR NUMBER: *043-942*  
AMENDMENT NUMBER: *6*

ONR:603:EAS:eal

*The Trustees of Princeton University  
Princeton, New Jersey*

*None - 1858(04)  
(Mathematical  
Sciences Division)*

To establish the negotiated overhead rate under Task Order *None - 1858(04)* for the period from *1 July 1959* through *30 September 1959* in accordance with *Clause 33*, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under *Section 2* covering the period from *1 July 1959* through *30 June 1960* in its entirety and substitute in lieu thereof the following:

<u>%</u>	<u>"Period for which Applied"</u>
	<u>From</u> <u>Through</u>
<i>12</i> % of the salaries and wages reimbursed under <i>Clause 18(a)(2)</i> of the contract.	<i>1 July 1959</i> <i>30 September 1959</i>
<i>12</i> % provisionally of the salaries and wages reimbursed under of the contract."	

This amendment makes no change in the estimated cost of Task Order *None - 1858(04)*.

*ONR New York*

*60948*

*A*

13 MAR 1962



REF. / SERIAL NO.

DOCUMENT DATE

SUBJECT AND ENCLOSURES

CONTRACT NUMBER None - 1858(04)

AMENDMENT NUMBER

\* A - ACTION                    I - INFORMATION  
C - COMMENT                    S - SIGNATURE

6 3 3 2 1 3



CHECK LIST FOR DISTRIBUTION OF ONR CONTRACTS  
NAVEXOS 4381 (REV. 5-60)

CONTRACT NO. <i>Non-1858 (04)</i>	AMENDMENT NO. <i>5</i>	DISTRIBUTION DATE <i>12 APR 1961</i>	DOCUMENT DATE <i>20 Feb 1961</i>
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COPY DISTRIBUTION REQUIREMENTS

GENERAL		THIS CONTRACT		GENERAL		THIS CONTRACT	
NAME OF ACTIVITY	NO. OF COPIES	ACTIVITY	DISTRIB-UTED	NAME OF ACTIVITY	NO. OF COPIES	ACTIVITY	DISTRIB-UTED
GAO (original - with D and F)	<i>1</i> ✓			CONTRACT ADMINISTRATION			
				BRANCH OFFICE <i>N.Y.</i>	<i>3</i> ✓		
DISBURSING				INM	3		
NRAO <i>3rd</i>	<i>1</i> ✓			BAR	3		
NRL - WASH., D. C. (1 Original)	5			OTHER			
COMPTROLLERS				BUSANDA F4-11	1		
BUSHIPS	1			BUSANDA OD-4 (on DRO)	1		
BUORD	1						
BUAER	1			ONM INSURANCE BRANCH	1		
BUMED	1						
				NAVCOMP - CONTRACT AUDIT	1		
				NAAO <i>Phila</i>	<i>1</i> ✓		
ONR - INTERNAL (by Code No.)				DTMB CODE 580	4		
106	<i>1</i> ✓						
322	<i>1</i> ✓						
410	1						
419	1						
420	1						
430	1						
440	2						
450	1						



REF. / SERIAL NO.

DOCUMENT DATE

**SUBJECT AND ENCLOSURES**

CONTRACT NUMBER None - 1858(04) TASK ORDER \_\_\_\_\_ AMENDMENT NUMBER 5

ROUTING (CODE NO.)	PUR- POSE *	RECEIVED		RELEASED		COMMENTS (Initial and date)
		DATE		DATE		
		INITIALS	INITIALS	INITIALS	INITIALS	
603a				2/13/61		
603						
650(Records)		2/26				
650(Typing)						
650(Distr.)						
600						
650(Distr.)						

I - INFORMATION  
S - SIGNATURE

**G17518**



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
NR NUMBER: 043-942  
AMENDMENT NUMBER: 5

ONR:603:EAS:  
Nonr-1858(04)

(Mathematical  
Sciences Division)

The Trustees of Princeton University  
Princeton, New Jersey

To establish the negotiated overhead rate under Task Order Nonr-1858(04) for  
the period from 1 July 1958 through 30 June 1959 in  
accordance with Clause 33, "Negotiated Overhead Rates," of  
the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under  
Section D covering the period from 1 July 1958 through  
30 June 1959 in its entirety and substitute in lieu thereof the following:

<u>%</u>	<u>"Period for which Applied"</u>	
	<u>From</u>	<u>Through</u>
67 % of the salaries and wages reimbursed under Clause 18(a)(2) of the contract	1 July 1958	30 June 1959

At billing rates acceptable to the  
Comptroller of the Navy (Contract Audit  
Division.)"

1 July 1959 30 June 1960

This amendment makes no change in the estimated cost of Task Order Nonr-1858(04).



CHECK LIST FOR DISTRIBUTION OF ONR CONTRACTS  
NAVEXOS 4381

CONTRACT NO. <i>Mem-1858(14)</i>	AMENDMENT NO. <i>4</i>	DISTRIBUTION DATE <i>2-27-59</i>	DOCUMENT DATE <i>16 February 1959</i>
-------------------------------------	---------------------------	-------------------------------------	--

COPY DISTRIBUTION REQUIREMENTS

GENERAL		THIS CONTRACT		GENERAL		THIS CONTRACT	
NAME OF ACTIVITY	NO. OF COPIES	ACTIVITY	DISTRIB-UTED	NAME OF ACTIVITY	NO. OF COPIES	ACTIVITY	DISTRIB-UTED
GAO (original - with D and F)	<i>1</i>			CONTRACT ADMINISTRATION			
				BRANCH OFFICE <i>n.y.</i>	<i>3</i>		
				INM	3		
				BAR	3		
DISBURSING				OTHER			
NRAO <i>3rd</i>	<i>1</i>			BUSANDA F4-11	1		
NRL - WASH., D. C. (1 Original)	5			BUSANDA OD-4 (on DRO)	1		
COMPTROLLERS				ONM INSURANCE BRANCH	1		
BUSHIPS	1			NAVCOMP - CONTRACT AUDIT	<i>1</i>		
BUORD	1			NAAO <i>n.y.</i>	<i>1</i>		
BUAER	1			DTMB CODE 580	4		
BUMED	1						
ONR - INTERNAL (by Code No.)							
106	<i>1</i>						
312	<i>1</i>						
410	1						
419	1						
420	1						
430	<i>1</i>						
440	2						
450	1						
460	1						
603 - (Overhead documents)	<i>1</i>						
640 - (Facilities only)	1						



REF. / SERIAL NO.

DOCUMENT DATE

2/5/59

A C C O U N T I N G C H A N G E

CONTRACT NUMBER Wom-1858(04) TASK ORDER \_\_\_\_\_ AMENDMENT NUMBER 4

[illegible]

I - INFORMATION  
S - SIGNATURE



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: *Non-1858(04)*  
AMENDMENT NUMBER: *4*

*The Trustees of Princeton University  
Princeton, New Jersey*

ONR:603:CAH:

*Non-1858(04)  
(Mathematical Sciences Division)*

To establish the negotiated overhead rate under Task Order *Non-1858(04)* for the period from *1 July 1957* through *30 June 1958* in accordance with *Clause 33*, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under *Section D* covering the period from *1 July 1957* through *30 June 1958* in its entirety and substitute in lieu thereof the following:

	<u>%</u>	<u>"Period for which Applied"</u>	
		<u>From</u>	<u>Through</u>
(i)	<u>52</u> % of the salaries and wages reimbursed under <i>Clause 18(a)(2)</i> of the contract	<i>1 July 1957</i>	<i>30 June 1958</i>
(ii)	<u>52</u> % provisionally of the salaries and wages reimbursed under <i>Clause 18(a)(2)</i> of the contract	<i>1 July 1958</i>	<i>30 June 1959</i>

This amendment makes no change in the estimated cost of Task Order *Non-1858(04)*



Code 650-OD-E-2/58

## OFFICE OF NAVAL RESEARCH CONTRACT DISTRIBUTION LIST

ACTIVITIES	No. of Copies	Contract Number <i>Non-1858 (04)</i>	Amendment Number <i>3</i>
GAO (original) with D & F <i>1</i>	<i>1</i>	Document Date <i>1 Oct. 1958</i>	
		Distribution Date <i>11-13-58</i>	
DISBURSING			
NRAO <i>3rd</i>	<i>1</i>	ACTIVITIES (Cont'd)	No. of Copies
NRL - Wash D.C. (1 Orig.)	5		
		440	2
COMPTROLLERS		450	1
BuShips	1	460	1
BuOrd	1	603 (Overhead documents)	1
BuAer	1	312	<i>1</i>
BuMed	1	640 (facilities only)	1
		OTHER	
		BuSandA F4-11	1
CONTRACT ADMINISTRATION		BuSandA OD-4 (on DRO)	1
Branch Office <i>N.Y.</i>	<i>1</i>		
INM	3	ONM Insurance Branch	1
BAR	3		
		NavComp - Contract Audit	<i>1</i>
OFFICE OF NAVAL RESEARCH		NAAO - <i>N.Y.</i>	<i>1</i>
Code		DTMB Code 580	4
106	<i>1</i>		
410	1		
419	1		
420	1		
430	<i>1</i>		



CONTRACTOR: The Trustees of Princeton University  
CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 3

DATE

10-10-58

Code 610 K

The following information should be forwarded to the Administering Office:

- (1) Clearance Memorandum dated -
- (2) Other (Indicate) NO COST AMEND. #3

ROUTING (CODE NO.)	PUR- POSE *	RECEIVED	RELEASED	COMMENTS (Initial and date)
		DATE INITIALS	DATE INITIALS	
610A	(West)	10/10/58	[Signature]	Has Amend. #6 to Basic Contract been returned executed? Overhead is OK.
610E	(East)	10/10/58	[Signature]	
610M				
610K				
610N		10/10/58	[Signature]	
610		10/10	[Signature]	
106		10/14/58	[Signature]	
610-				
610N	Recorded: In: Out:	10/15/58 10/16/58	Proofed: Typed: Read by:	[Signature] -10-15-58 [Signature] 10/16/58
655		10-31	[Signature]	
600		10/31/58	[Signature]	
655		10-31	[Signature]	



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 3  
AUTHORITY: NR 043-942/10-1-58

ONR:610:IAD  
Nonr-1858(04)  
(Mathematical Sciences  
Division)

The Trustees of Princeton University  
Princeton, New Jersey


The Contractor has advised that due to lack of qualified personnel during the present period of performance, the research in the field of non-linear differential equations, under Task Order Nonr-1858(04), cannot be completed within the period originally contemplated. In order to permit completion of the research it is the desire of the Government and the Contractor that the period of performance under said Task Order be extended.

In consideration of the foregoing, and subject to the Contractor's execution of Amendment Number 6 to Contract Nonr-1858(00), Task Order Nonr-1858(04), as amended, is hereby further amended by deleting Section J in its entirety and substituting in lieu thereof the following:

"SECTION J - The performance of work under this Task Order shall be completed on 30 September 1959."

This amendment makes no change in the total estimated cost of Task Order Nonr-1858(04).

This amendment is made pursuant to 10 U.S.C. 2304(a)(5), and any required Determination and Findings with respect thereto has been made.

  
L. A. Duncker



Code 650-OD-E -2/58

## OFFICE OF NAVAL RESEARCH CONTRACT DISTRIBUTION LIST

ACTIVITIES	No. of Copies	Contract Number	
		Amendment Number	
GAO (original) with D & F	1	Document Date	12 June 1958
		Distribution Date	9-7-58
DISBURSING			
NRAO 3rd	1		
NRL - Wash D.C. (1 orig.)	5	ACTIVITIES (Cont'd)	No. of Copies
		440	2
COMPTROLLERS		450	1
BuShips	1	460	1
BuOrd	1	603 (overhead documents)	1
BuAer	1	312	1
BuMed	1	640 (facilities only)	1
		OTHER	
		BuSandA FL-11	1
CONTRACT ADMINISTRATION		BuSandA OD-4 (on DRO)	1
Branch Office	3		
INM	3	ONM Insurance Branch	1
BAR	3		
		NavComp - Contract Audit	1
OFFICE OF NAVAL RESEARCH		NAAC -	1
Code		DTMB Code 580	4
106	1		
410	1		
419	1		
420	1		
430	1		



FROM

REF. / SERIAL NO.

DOCUMENT DATE

6/4/58

SUBJECT AND CLOSURES

## A C C O U N T I N G   C H A N G E

CONTRACT NUMBER: Non-1855(04) TASK ORDER: \_\_\_\_\_ AMENDMENT NO: 2

ROUTING (CODE NO.)	PUR- POSE *	RECEIVED	RELEASED	COMMENTS  (Initial and date)
		DATE	DATE	
		INITIALS	INITIALS	
603(a)		6/4/58		
		[red box]		
603		6/7/58		
		[red box]		
655		[red box] 6-12		
		[red box] 6-9		
600		6-12 [red box]		
655		6-12 [red box] my		

2. COGNIZANCE  
4. ACTION



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: *Nonv-1858(04)*  
AMENDMENT NUMBER: *2*

*The Trustees of Princeton University  
Princeton, New Jersey*

ONR:603:CAH:

*Nonv-1858(04)  
(Mathematical Sciences Division)*

To establish the negotiated overhead rate under Task Order *Nonv-1858(04)* for the period from *1 October 1956* through *30 June 1957* in accordance with *Clause 33*, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under *Section D* covering the period from *1 October 1956* through *30 June 1957* in its entirety and substitute in lieu thereof the following:

		"Period for which Applied From Through
(i)	<u><i>58</i></u> % of the salaries and wages reimbursed under <i>Clause 18(a)(2)</i> of the contract	<i>1 October 1956 30 June 1957</i>
(ii)	<u><i>58</i></u> % provisionally of the salaries and wages reimbursed under <i>Clause 18(a)(2)</i> of the contract	<i>1 July 1957 30 June 1958."</i>

This amendment makes no change in the estimated cost of Task Order *Nonv-1858(04)*



Code 650-OD-E-11/56

## OFFICE OF NAVAL RESEARCH CONTRACT DISTRIBUTION LIST

ACTIVITIES	No. of Copies	Contract Number <i>4000-1858(04)</i>	Amendment Number <i>1</i>
GAO (original) with D & F	<i>1</i>	Document Date <i>19 August 1957</i>	
		Distribution Date <i>10/2/57</i>	
DISBURSING			
NRAO <i>3 rd</i>	<i>1</i>	ACTIVITIES (Cont'd)	No. of Copies
NRL - Wash D.C. (1 orig.)	<i>5</i>		
		440	2
COMPTROLLERS		450	1
BuShips	1	460	1
BuOrd	1	603 (overhead documents)	1
BuAer	1		
BuMed	1		
		OTHER	
		BuSandA F4-11	1
CONTRACT ADMINISTRATION		BuSandA OD-4 (on DRO)	1
Branch Office <i>M. J.</i>	<i>3</i>		
INM	3	ONM Insurance Branch	1
BAR	3		
		NavComp - Contract Audit	<i>5</i>
OFFICE OF NAVAL RESEARCH		<i>4000-1858(04)</i>	<i>4</i>
Code		DTMB Code 580	4
106	<i>1</i>		
410	1		
419	1		
420	1		
430	<i>1</i>		

C27621



ONR INTER-OFFICE ROUTE SHEET  
NAVEXOS 3067 (5-55)

Contractor: The Trustees of Princeton University  
Contract Number: Nonr-1858(04)  
Amendment Number: 1

2-91-57  
Date  
29 July 1957

Code  
610-E

The following information should be forwarded to the Administering Office:

- (1) Clearance Memorandum dated 29 July 1957
- (2) Other (Indicate)

ROUTING (CODE NO.)	PUR- POSE *	RECEIVED	RELEASED	
		DATE INITIALS	DATE INITIALS	
610X West		7/30/57	[Signature]	
610E (East)				
610M				
610K				
610N		7/30/57	[Signature]	(7)
610		7/20	[Signature]	
603			[Signature]	Note #4 of draft-MN
106		5/1/57	[Signature]	
610-				
610N		Recorded: In: [Signature] Out: [Signature]	Proofed: [Signature] Typed: 8-12-57 Read by: [Signature]	
655		[Signature]	[Signature]	Mail with Amendment 4 to Contract Nonr-1858(00)
600		8-16	[Signature]	
655		8-19	[Signature]	



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER:	Nonr-1858(04)	ONR:610:JR:
AMENDMENT NUMBER:	1	Nonr-1858(04)
AUTHORITY:	NR 043-942/5-15-57	(Mathematical Sciences
APPROPRIATION:	(See next to last paragraph hereof)	Division)
INCREASE:	\$20,000.00	

The Trustees of Princeton University

Princeton, New Jersey

It is the desire of the Government and Contractor that additional research in the field of non-linear differential equations be performed. To accomplish this, there are hereby provided an extension in the period of performance of Task Order Nonr-1858(04) and an increase in the estimated cost thereof.

In consideration of the foregoing, and subject to the Contractor's concurrent execution of Amendment Number 4 to Contract Nonr-1858(00), Task Order Nonr-1858(04) is hereby amended as follows:

1. At the top of the first page, under the list of Appropriations, add the following:

"17X1319.88 Research and Development, Navy  
(Expenditure Account 46032)  
(Object Classification 079)  
Bureau Control Number 80501  
Bureau Accounting Activity Number 14 - \$20,000.00."

2. At the top of the first page, delete the Estimated Cost in its entirety and substitute in lieu thereof the following:

"ESTIMATED COST: \$51,196.00."

3. Delete Section C in its entirety and substitute in lieu thereof the following:

"SECTION C - The estimated cost of the performance of this Task Order is fifty one thousand one hundred ninety six dollars (\$51,196.00)."

4. Effective as of the date of this amendment, add the following under Section D:

"Subject to the provisions of clause 33 of the contract, the following percentage shall be applied with respect to this Task Order in the amount or amounts, and for the period or periods, specified below:



CONTRACT NUMBER: Nonr-1858(04)  
AMENDMENT NUMBER: 1

Period for which Applied  
From \_\_\_\_\_ Through \_\_\_\_\_

61% provisionally of the  
salaries and wages reimbursed  
under Clause 18(a)(2) of the  
contract.

1 October 1956 30 June 1957."

5. Effective as of the date of this amendment, Section H shall read as follows:

"SECTION H -

The Contractor is authorized to use the Government property for the performance of (1) any cost-type contract with the Office of Naval Research; (2) any fixed price contract with the Office of Naval Research provided that the Contractor has notified the Contracting Officer in writing of its intent to use the said property during negotiations relative to the said contract; and (3) such other Government contracts as are approved in writing by the Contracting Officer. The Contractor agrees that while the property is in its possession it will not use such property except as provided above."

6. Delete Section J in its entirety and substitute in lieu thereof the following:

"SECTION J - The performance of work under this Task Order shall be completed on 30 September 1958." *ag*

This amendment increases the total estimated cost of Task Order Nonr-1858(04) by \$20,000.00, which increase is chargeable against Appropriation 17X1319.88 Research and Development, Navy (Expenditure Account 46032) (Object Classification 079) Bureau Control Number 80501, Bureau Accounting Activity Number 14.

This amendment is made pursuant to 10 U.S.C. 2304(a)(5), and any required determination and findings with respect thereto has been made.

APPROVED

Arthur Grad  
Scientific Officer

Date

30 July 1957

J. RICHMAN



DISTRIBUTION LIST - FINAL

Date of Document 1 April 1956

Contract Number Nnr-1858 (04)

Chief, Reconciliation and Clearance Subdivision, Navy Audit Branch,  
General Accounting Office, 1901 East 13th Street, Cleveland, Ohio  
(All UNCLASSIFIED documents)

~~1 original~~

D & F (to GAO)

1 copy

Assistant Chief, Reconciliation and Clearance Subdivision, Navy Audit  
Branch, General Accounting Office, 1901 East 13th Street, Cleveland,  
Ohio (All CLASSIFIED documents)

1 original

InsMat or BAR

3 copies

Navy Regional Accounts Office, on DRO

3 RD Naval District

Naval Research Laboratory Disbursing Office (1 original)

5 copies

Bureau of Supplies and Accounts, Code AP-2, Arlington Annex

1 copy

Bureau of Supplies and Accounts, Code AP-111, Arlington Annex

1 copy

Bureau of Supplies and Accounts, Budget and Finance, Code OD-4,  
Room 1312, Arlington Annex (To be listed on DRO)

1 copy

Bureau of Supplies and Accounts, Property Accounting Div., Arlington  
Annex, Room 2527 (For Contracts having Government Furnished Material)

1 copy

ONR Branch Office NY

~~3 copies~~

Mr. Lynch, 2110 G. Street, N.W., Washington, D. C. (3rd Floor)

2 copies

Contractor (If requested)

copies

Cognizant ONR Scientific Division

Earth Sciences Physical Sciences Mathematical Sciences

~~1 copy~~

Naval Sciences Material Sciences Psychological Sciences

1 copy

Biological Sciences

2 copies

(Via Research Group Branch, Code 4025)



FISCAL SECTIONS - To be listed on DRO

ONR, Code 510 (No DRO)

1 copy

BuShips

1 copy

BuOrd (Designate cognizant NRAO on this copy)

1 copy

BuAer

1 copy

BuMed

1 copy

BuPers

1 copy

BuYds and Docks

1 copy

Wright-Patterson Air Force Base

4 copies

Research and Development, Army

2 copies

Atomic Energy Commission

2 copies

ONM, Insurance Branch, Room 2234, Main Navy, Mr. Shetley  
(On all Estimated Cost Contracts) (Unclassified Only)

1 copy

Office of the Comptroller, Cost Inspection Service  
(On all Estimated Cost Contracts)

~~3 copies~~

Mr. Pace, Room 1820, Code 106 (All UNCLASSIFIED documents)

~~1 copy~~

Code 603 (Overhead documents only)

1 copy

Commanding Officer & Director, David Taylor Model Basin,  
Washington 7, D. C. Attn: Contract Research Division, Code 580  
(When David Taylor Model Basin appropriation, 7 copies)

4 copies



30 APR 1956

SUBJECT Contractor: The Trustees of Princeton University  
Contract No.: Nonr-1858(04)  
Amendment No.: --

DATE 4/26/56  
FROM CODE 610-E

ORIGINATOR'S COMMENTS: The following information should be forwarded to the Administering Office:  
(1) Clearance Memorandum dtd 4/24/56  
(2) Other (Indicate)

TO (Code)	PUR- POSE	DATE	INITIAL	REMARKS
610X West		4/26/56	[initials]	Basic contract is current
610E (East)				
610M				
610W		4/26/56	[initials]	(5)
610		4/27/56	[initials]	
603		1/27	[initials]	See Section D- and
106		5/3/56	[initials]	
610-		5/14	[initials]	
610W	Recorded: In: 5/14	5/14	Out: 5/14	Proofed: 5-18-56 [initials] Typed: [initials] Read by: [initials]
655	5/14	[initials]	5/22	To be mailed together with Amend. #10 to Task Order V under Contract N6ori-105
600	5/22	[initials]	[initials]	
655	5/22	[initials]	[initials]	3 add.
(Report of Obligation)				

1-Info for Additional Routing  
& Purpose Designation

2-Info & Return  
3-Prepare Reply

4-Necessary Action  
5-Memo Comment

6-Guidance  
7-Compliance

8-Retain Encl  
9-Retain Cor



~~Task Order - A Type~~

DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
CONTRACT NUMBER: ~~Nonr~~-1858(04)

RESEARCH AND DEVELOPMENT TASK ORDER

CONTRACTOR: The Trustees of Princeton University

AUTHORITY: NR 043-942/1-16-56 (R&L) (Mathematical Sciences Division)

APPROPRIATIONS: 17X1319.58 Research and Development, Navy

(Expenditure Account 46000)

(Object Classification 079)

Bureau Control Number 32000

Bureau Accounting Activity Number 14

- \$7,446.00

17X1319.68 Research and Development, Navy

(Expenditure Account 46032)

(Object Classification 079)

Bureau Control Number 80000

Bureau Accounting Activity Number 14

- 23,750.00

ESTIMATED COST: \$31,196.00

This Task Order is established under, and constitutes a part of Contract ~~Nonr~~-1858(00), which sets forth the basic contract provisions applicable hereto. In case of any conflict between the provisions of said Con-



CONTRACT NUMBER: Nonr-1858(04)

SECTION E - All costs which have been incurred by the Contractor on and after 15 February 1956, in anticipation and prior to the signing of this Task Order, and which, if incurred after the signing of this Task Order, would have been considered as items of allowable cost hereunder, shall be deemed as items of allowable costs under this Task Order.

SECTION F - Restoration or rehabilitation rights accrued under Task Order V of Contract N6ori-105, but not satisfied or paid for thereunder, shall be deemed to have been accrued hereunder.

SECTION G - Vacation time earned or accrued under Task Order V of Contract N6ori-105, but not taken or paid for thereunder, shall be deemed to have been earned or accrued hereunder.

SECTION H - The Government Property provided or furnished pursuant to the terms of this Task Order may also be used by the Contractor for the performance of any Office of Naval Research contract.

SECTION I - The Contractor shall submit a final report upon completion of work hereunder, making full disclosures of all research conducted, and shall submit such other reports as are required by the Scientific Officer. In material submitted hereunder as technical reports, there shall be affixed to the front of the face page of each such technical report a statement to the effect that "reproduction in whole or in part is permitted for any purpose of the United States Government."

SECTION J - The performance of work under this Task Order shall ~~commence on~~ be completed on 30 September 1957. ~~and shall be completed on~~ R402

This Task Order is made pursuant to the provisions of Section 2(c)(5) of the Armed Services Procurement Act of 1947 (Public Law 413, 80th Congress), and any required Determination and Findings with respect thereto has been made.

APPROVED BY:

Robert H Owens  
Scientific Officer

4/26/58  
Date

J. Richman

2

B-1-2



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
NR NUMBER: 043-942  
AMENDMENT NUMBER: 6

ONR:603:EAS:eal  
Nonr-1858(04)  
(Mathematical  
Sciences Division)

26 February 1962

The Trustees of Princeton University

13 MAR 1962

Princeton, New Jersey

To establish the negotiated overhead rate under Task Order Nonr-1858(04) for the period from 1 July 1959 through 30 September 1959 in accordance with Clause 33, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under Section D covering the period from 1 July 1959 through 30 June 1960 in its entirety and substitute in lieu thereof the following:

<u>%</u>	<u>"Period for which Applied"</u>	
	<u>From</u>	<u>Through</u>
<u>72%</u> of the salaries and wages reimbursed under Clause 18(a)(2) of the contract."	1 July 1959	30 September 1959

This amendment makes no change in the estimated cost of Task Order Nonr-1858(04).

\_\_\_\_\_  
Name of Contractor

UNITED STATES OF AMERICA

By \_\_\_\_\_  
Signature Date

By \_\_\_\_\_  
Signature of Contracting Officer Date

\_\_\_\_\_  
Typed Name and Title





DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

IN REPLY REFER TO  
ONR:650:

13 MAR 1962

The Trustees of Princeton University  
Princeton, New Jersey

Gentlemen:

Three (3) copies each of the contractual documents listed below are forwarded herewith. These documents have been executed on behalf of the Government. If the terms and conditions are acceptable to you, please execute all three (3) copies of each document, and return two (2) copies to this Office, Attention: Code 650.

If for any reason you are unable to execute and return any of these documents within ten (10) days, please acknowledge receipt of this letter and furnish an estimated date of execution.

Sincerely yours,

H. D. MOORE  
CDR, SC, USN  
Contracting Officer

Encls:

1. Three (3) copies each of  
the following documents:

Nonr-03001 Amendment 20  
Nonr-1858(02) Amendment 10  
Nonr-1858(03) Amendment 18  
Nonr-1858(04) Amendment 6  
Nonr-1858(05) Amendment 12  
Nonr-1858(06) Amendment 11  
Nonr-1858(07) Amendment 7  
Nonr-2106(00)(X) Amendment 8



FILE

ONR-650 ecw  
Nonr-1858(04)  
XXX 26 Feb 62  
Ser

THIRD ENDORSEMENT on NAAO/Philadelphia ltr PRO 7584/Prin U dtd 12 Oct 61

From: Chief of Naval Research  
To: OinC, U. S. Navy Regional Accounts Office, Third Naval District, Brooklyn  
32, New York  
Subj: Contract Nonr-1858(04), Princeton University; forwarding of final voucher  
in the amount of \$1,365.72 and related terminal documents

1. Forwarded to be placed in line for payment, same having been duly certified by the Technical Officer, Mr. Julian H. Levy, Office of Naval Research Resident Representative, Princeton, New Jersey.
2. Final technical reporting requirements with respect to the research work performed have been properly fulfilled to the satisfaction of the cognizant Scientific Officer.
3. Proper accounting has been made of all Government-owned property furnished for use under subject contract.
4. Subject Contractor has satisfactorily complied with patent provisions of the contract; therefore, insofar as patent license provisions are concerned, payment of final settlement may be made.
5. Contractor's Release of the Government, conditioned upon the payment of the sum of \$ 51,003.28 , the sum of \$ 49,637.56 having been heretofore paid and the sum of \$ 1,365.72 to be paid (represented by Final Voucher), has been reviewed as to form and approved by the Contracting Officer.
6. Proper technical certification of the Final Audit Report for subject contract was made on 14 February 1962 by Dr. Leila Bram, Scientific Officer, Office of Naval Research, Washington 25, D. C.
7. After payment of subject voucher, a sum of \$51,003.28 will have been paid to the Contractor (from a total estimated cost of \$51,196.00) leaving an unexpended balance of \$192.72 in the contract. It is requested that an Obligation Adjustment Notice (NAVSANDA Form 624) in the amount of such unexpended balance be prepared and forwarded to this Office (Attention Code 510).
8. Enclosures (5) through (7) have been retained for the files of this Office.



FROM

REF./SERIAL NO.

DOCUMENT DATE

Code 650

1-26-62

SUBJECT AND ENCLOSURES

~~NR 1858(04)~~ **NR 43-94V** Princeton University; Contract settlement

ROUTING (CODE NO.)	PUR- POSE *	RECEIVED	RELEASED	COMMENTS (Initial and date)
		DATE INITIALS	DATE INITIALS	
650		1/30/62 [Signature]	[Signature]	Not 425. Try 432. [Signature]
425		1/30/62 [Signature]	1/31/62 [Signature]	Has the Contractor satisfactorily completed all of its technical reporting requirements under subject contract? Yes [Signature]
432		2/14/62 [Signature]		If completed, please sign three copies of the attached Certificate of Technical Inspector.
650			2/14/62	

\* A - ACTION  
C - COMMENT

I - INFORMATION  
S - SIGNATURE



641

DOCUMENT DATE

1-26-62

Contract Nonr-1858(04), NR 330-023, Princeton University; contract settlement

ROUTING (CODE NO.)	PUR- POSE *	RECEIVED	RELEASED	COMMENTS (Initial and date)
		DATE	DATE	
		INITIALS	INITIALS	
650		1/30/62	ECW	
640		2/1/62	ms	Final property check. No property per records of Code 640 ms
650				



FROM

Officer in Charge  
U. S. Navy Area Audit Office, Washington 25, D. C.

TO

Chief of Naval Research (450)

VIA

2nd Endorsement on OlnC, NAO, Phila. ltr  
PNO, 7584/Prin U. dtd 12 Oct 1961 w/encs

FILE NUMBER

OC  
7560  
(Princeton)

DATE

24 JAN 1962

SUBJECT

Contract Nmr 1858 (04) (NR 043-942) /w/ Princeton U, Princeton, N. J.  
Contract Audit Closing Statement dtd 12 Oct. 61 and related documents-  
Forwarding of

REFERENCE

ENCLOSURE

<input checked="" type="checkbox"/> FORWARDED	<input type="checkbox"/> RETURNED	<input type="checkbox"/> FOLLOW-UP	<input type="checkbox"/> REQUEST	<input type="checkbox"/> ADVISE	<input type="checkbox"/> SUBMIT
<input checked="" type="checkbox"/> X	MESSAGE	<input checked="" type="checkbox"/> X	MESSAGE	<input checked="" type="checkbox"/> X	MESSAGE
<input checked="" type="checkbox"/> X	FOR APPROPRIATE ACTION		SUBJECT DOCUMENT(S) WAS/WERE FORWARDED TO YOUR OFFICE AS A MATTER UNDER YOUR JURISDICTION.		DD FORM 250-3 IMMEDIATELY FOR MATERIAL ON SUBJECT PURCHASE DOCUMENT REC'D AT THIS ACTIVITY.
	FOR INFORMATION OR CERTIFICATION AND/OR FILE.		SUBJECT DOCUMENTS WAS/WERE APPROVED AND FORWARDED TO YOU.		CERTIFY ENCLOSURE AS TO RECEIPT AND ACCEPTANCE OF MATERIAL AND FORWARD TO
	<input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED		COPY(IES) OF THIS CORRESPONDENCE WITH YOUR REPLY.		COPIES OF SUBJECT CHANGE ORDER AMENDMENT OR MODIFICATION
	APPROVAL <input type="checkbox"/> IS <input type="checkbox"/> IS NOT RECOMMENDED		ENCLOSURE(S) IS/ARE FORWARDED AS REQUESTED BY REFERENCE		CHANGE NOTICE TO THE SUPPLIER
	CONCURRING IN RECOMMENDATIONS MADE IN THE BASIC CORRESPONDENCE.		ENCLOSURE(S) IS/ARE RETURNED FOR CORRECTION AS INDICATED.		COPIES OF APPLICABLE PLANS AND/OR SPECIFICATIONS.
	COMMENTS AND/OR RECOMMENDATIONS.		CORRECTED ENCLOSURE(S) AS REQUESTED		FOR PLAN ACTION AS INDICATED
	MAILING LIST ACTION		SUBJECT PERSON'S ATTENTION SHOULD BE INVITED TO THIS MATTER		CLASSIFICATIONS OF DEFECTS FOR SUBJECT ITEMS
	FOR ASSIGNMENT OF BUREAU FILE NUMBER(S)		SUBJECT PERSON(S) REPORTED TO THIS COMMAND		CONFIRMATION THAT INSPECTION OR SOURCE INSPECTION IS NOT REQUIRED
	ON A LOAN BASIS RETURN BY		SUBJECT PERSON(S) COMPLETED HIS/THEIR DUTY AND WAS/WERE DETACHED FROM THIS COMMAND		INSPECTION UNDER THE SUBJECT SUBCONTRACT. IS NOT REQUIRED
	SIGN ORIGINAL RECEIPT AND RETURN TO THIS OFFICE.		NAME AND LOCATION OF SUPPLIER OF SUBJECT ITEMS.		COPIES OF SUBJECT PURCHASE DOCUMENT. IF SOURCE INSPECTION OR PROGRESSING IS REQUIRED
	SUBJECT FILES, WHICH ARE LOCATED IN BOX NO. SHIPMENT NO.		SUBCONTRACT NUMBER FOR SUBJECT ITEM		STATUS OF MATERIAL ON SUBJECT PURCHASE DOCUMENT
	REPLY TO THE ABOVE REFERENCE(S) BY		SUBJECT PURCHASE DOCUMENT HAS BEEN REQUESTED AND WILL BE FORWARDED WHEN RECEIVED.		CLEARANCE AS INDICATED IN BASIC CORRESPONDENCE VERIFIED. NO REPLY UNLESS NEGATIVE.
	COPY(IES) OF REFERENCE DESCRIBED ABOVE WAS/WERE NOT RECEIVED.		ENDORSEMENT OF SUBJECT SUBCONTRACT IS BEING DELAYED PENDING RECEIPT OF BASIC PURCHASE DOCUMENT.		VERIFICATION OF NEED-TO-KNOW FOR VISIT PERSONNEL CLEARANCES VERIFIED.
	SUBJECT DOCUMENT(S) WAS/WERE FORWARDED TO		APPROPRIATION SYMBOL SUBHEAD AND CHARGEABLE ACTIVITY		
	SUBJECT DOCUMENT(S) IS/ARE WAS/WERE RETURNED FOR		WHETHER SUBJECT ITEMS ARE TO BE COMMERCIALY SHIPPED OR AT GOVERNMENT EXPENSE		
			A CERTIFICATE IN LIEU OF SUBJECT BILL OF LADING WHICH HAS BEEN LOST.		SEE REMARKS ON THE REVERSE SIDE.

COPY TO

CO, ONR, New York  
OlnC, NAO, Phila.

SIGNATURE

J. L. KIRALY  
By direction



## OFFICE OF NAVAL RESEARCH, NEW YORK

346 BROADWAY

NEW YORK 13, NEW YORK

IN REPLY REFER TO

L4-3/3P/JHL:jbn

NOnr 1858 (04)

Ser 4239

NOV 7 1961

FIRST ENDORSEMENT On U.S. Navy Area Audit Office, Philadelphia 22, Pa.  
ltr PRO 7584/Prin U dtd 12 October 61 /s/ W.E. Cates /w/ enclosures to  
ONR New York

From: Commanding Officer, Office of Naval Research, New York 13, N.Y.  
To: Office of Naval Research, Washington 25, D.C. (Code 650)

Via: Comptroller of the Navy (Contract Audit Division) Washington 25, D.C.

Subj: Contract NOnr 1858 (04) (NR 043-942) /w/ Princeton U, Princeton, N.J.  
Contract Audit Closing Statement dtd 12 Oct. 61 and related documents-  
Forwarding of

Encl: (6) Contractor's Final Property Certificate dtd 17 March 60 (2 cys)  
(7) Contractor's Final Invention Statement dtd 25 Jan. 60  
(Original & 2 cys)

1. Basic correspondence with enclosures thereto are forwarded for appropriate action.

2. The technical Officer's certification appears on the reverse side of enclosure (1) and has been signed by the cognizant Resident Representative of the Office of Naval Research, New York. The certificate of the Technical Inspector contained in enclosure (5) is referred to the Office of Naval Research, Washington 25, D.C. (Code 432) for signature.

3. Enclosure (6) is the contractor's Final Property Certification. ONR New York concurs with the contents therein. No property was furnished or fabricated on the work, and therefor none remains.

4. As indicated in enclosure (7) the contractor certifies that no patentable discoveries or inventions were conceived during the course of the work. The contractors statement to that effect is concurred in by the respective Heads of the Scientific and Patent Departments as evidenced by their signatures.

5. No classified documents were furnished to or generated by the contractor during the course of the work, therefor none remain.

6. The final technical report was furnished to the cognizant Scientific Officer 26 August 1960.



NOnr 1858 (04)

Ser 4239

NOV 7

1961

7. One copy each of enclosures (1) through (7) has been retained for the files of the Office of Naval Research, New York 13, New York.

C.W. HEYWOOD

CC to:

ONR-Wash-Code 640 /w/ Orig. & 1 cy encl: (6)

" " " 402S

NAAO-NY (Property Audit Division)

NAAO-Philadelphia, Pa.

NAO-Princeton, NJ



DEPARTMENT OF THE NAVY  
U. S. NAVY AREA AUDIT OFFICE  
1409 NORTH BROAD STREET  
PHILADELPHIA 22, PENNSYLVANIA

In Reply Refer to:  
PRO  
7584/Prin U

1 2 OCT 1961

From: Officer in Charge, U. S. Navy Area Audit Office, Philadelphia  
To: Chief of Naval Research, Washington 25, D. C.  
Via: Commanding Officer, Office of Naval Research, New York,  
346 Broadway, New York 13, New York

Subj: Contract Audit Closing Statement on Contract Nonr 1858(04) with  
The Trustees of Princeton University, Princeton, New Jersey

Encl: (1) Completion Voucher No. 33 - Original and nine (9) copies  
(2) Contractor's Cumulative Claim and Reconciliation - Original  
and nine (9) copies  
(3) Contractor's Release - Original and two (2) copies  
(4) Contractor's Assignment - Original and two (2) copies  
(5) Certificates of the Navy Auditor and Technical Inspector -  
Original and four (4) copies

1. Enclosures (1) through (5) are forwarded for appropriate action.

2. Contract Nonr 1858(04), a cost-reimbursement-type contract dated 1 April 1956, was entered into by the United States of America, represented by the Department of the Navy, Office of Naval Research, Washington, D. C., and The Trustees of Princeton University, Princeton, New Jersey, for the purpose of conducting research and development work as specified therein. Work on the contract was started 1 April 1956 and was physically completed 30 September 1959.

3. The contract, as amended, provided for the payment of a maximum amount of \$51,196.00 for costs incurred. A summary of estimated cost according to contract amendment follows:

	<u>Estimated Cost</u>
Basic Contract	\$31,196.00
Amendment No. 1	<u>20,000.00</u>
	<u>\$51,196.00</u>

4. Allowable costs were determined in accordance with Part 3, Section XV, Armed Services Procurement Regulation, and other terms of the contract.

5. All known refunds, rebates and credits are reflected in the approved costs and there are no known potential refunds, rebates or credits.



PRO  
7584/Prin U

6. None of the approved items of cost is likely to become the subject of an uncleared General Accounting Office Notice of Exception.
7. No property was acquired under the contract.
8. No formal disallowances were taken under the contract.
9. Moving costs billed under the contract have been approved by the Contracting Officer.
10. The undersigned, acting for and in behalf of the Comptroller of the Navy, who has been designated to determine the cost of performing Contract Nonr 1858(04) hereby certifies that the contractor's books, records and original evidences of cost have been audited and that as a result of such audit it has been determined that the amount of \$51,003.28 represents the allowable cost of performing said contract in accordance with the terms thereof. This certification is made subject to the execution of the certificate of the Technical Inspector and return of the original to this office.

W. E. CATES

Copy to:  
ONRRR Princeton  
CA NAO Princeton



Use continuation sheet(s) if necessary

U. S. **DEPARTMENT OF THE NAVY**  
(Department, bureau, or establishment)

Voucher prepared at Princeton, N. J., October 5, 1961  
(Give place and date)

Payee's Account No. C-904 Discount Terms Net

TO The Trustees of Princeton University  
(Payee)

P. O. Box 472 Princeton New Jersey  
(Address)

Contract No.	Nonr-1858(04)	Date	4/1/56	Req. No.		Date		Invoice Rec'd.	
Shipped from		to		Weight				Govt. B/L No.	

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary)	Quantity	UNIT PRICE		AMOUNT
				Cost	Per	
	5/1/59 thru 6/30/59	For costs incurred in connection with work performed under the subject contract				156 55
		RESUBMISSION:				
		Withheld for Patent Reserve from Voucher #16				1 209 17
		Technical Officer's certification on reverse side				
				TOTAL		1 365 72

**PAYMENT:**

COMPLETE	<input type="checkbox"/>
PARTIAL	<input type="checkbox"/>
FINAL	<input checked="" type="checkbox"/>
PROGRESS	<input type="checkbox"/>
ADVANCE	<input type="checkbox"/>

**(PAYEE MUST NOT USE THIS SPACE)**

## DIFFERENCES

Amount verified; correct for.  
(Signature or initials)\_\_\_\_\_

1,365.72

# MEMORANDUM

10 October 1961

H. W. HATTON  
Navy Auditor, NAO, Princeton, New Jersey

**ACCOUNTING CLASSIFICATION (REVISED 12-57)**

[illegible]

**I.R.No's.**

Project Order Date

Check No. \_\_\_\_\_ on Treasurer of the United States

Check No. \_\_\_\_\_ on \_\_\_\_\_ (Name of Bank)

Cash, \$ \_\_\_\_\_, on \_\_\_\_\_, 19\_\_\_\_



Public Voucher for Purchase and  
Services Other Than Personal

MEMORANDUM

CONTINUATION SHEET

U. S. DEPARTMENT OF THE NAVY

Sheet No. 1 of Bureau Voucher No. 33

(Department, bureau, or establishment)

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary)	QUAN- TITY	UNIT PRICE		AMOUNT	
				Cost	Per	Dollars	Cts.
		<u>C-904</u>  <u>COMPLETION VOUCHER</u> <u>May 1 - June 30, 1959</u>  <u>Indirect Costs</u> Adjustment from 64% to 67%, 1958-59 <u>3%</u> of <u>\$3,000.00</u>  <u>Materials &amp; Services</u> Items Under \$50.00 (Net Cost)  <u>Communications</u>  <u>TOTAL VOUCHER</u>  <u>CONTRACTOR'S CERTIFICATE</u>  "We certify that the above bill is correct and just, that payment has not been received and that the research provided for in said contract has been conducted in accordance with the terms thereof during that part of the period specified therein to which the costs stated in this voucher are applicable."  The Trustees of Princeton University  Date <u>October 5, 1961</u>  Per <u>W. M. Young</u>  Title <u>Controller</u>  Per <u>R. J. Woodrow</u>  Title <u>Assistant Treasurer</u>				90 00  25 80  40 75  <u>156 55</u>	

The Trustees of Princeton University - Nonr-1858(04)



CONTRACTOR'S CUMULATIVE CLAIM AND RECONCILIATION

Contract No. Nonr-1858(04)

Total Claimed from Inception of Work under this Contract,  
less disallowances concurred in by the contractor and  
disallowances not subject to appeal:

Materials	\$ 10 257 08
Salaries and Wages	24 592 73
Overtime Premium	
Equipment	
Communications and Shipping	229 30
Travel	1 891 18
Other Direct Costs	404 22
Overhead (indirect costs)	13 628 77
Subcontract Costs	

Total Amount Claimed \$ 51 003 28

Less: Amounts approved on Public Vouchers

Nos. 1 To 33 51 003 28

Items disallowed \$ 00

\_\_\_\_\_  
W. M. Young  
Controller

October 5, 1961

Date

THE TRUSTEES OF PRINCETON UNIVERSITY



CONTRACTOR'S RELEASE

Contract No. Nonr-1858(04)

Pursuant to the terms of Contract No. Nonr-1858(04)

and in consideration of the sum of fifty-one thousand three dollars  
and twenty-eight cents

(\$ 51,003.28) which has been or is to be paid under said contract to The Trustees of Princeton University, P.O. Box 472, Princeton, N. J. (hereinafter called the Contractor) or to its assignees, if any, the Contractor, upon payment of the said sum by the UNITED STATES OF AMERICA (hereinafter called the Government), does remis, release, and discharge the Government, its officers, agents, and employees, of and from all liabilities, obligations, claims, and demands whatsoever under or arising from the said contract, except:

1. Specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor, as follows: None
2. Claims, together with reasonable expenses incidental thereto, based upon the liabilities of the Contractor to third parties arising out of the performance of the said contract, which are not known to the Contractor on the date of the execution of this release and of which the Contractor gives notice in writing to the Contracting Officer within the period specified in the said contract.
3. Claims for reimbursement of costs (other than expenses of the Contractor by reason of its indemnification of the Government against patent liability), including reasonable expenses incidental thereto, incurred by the Contractor under the provisions of the said contract relating to patents.

The Contractor agrees, in connection with patent matters and with claims which are not released as set forth above, that it will comply with all of the provisions of the said contract, including without limitation those provisions relating to notification to the Contracting Officer and relating to the defense of the Contractor.




(\$ 51,003.28) which has been or is to be paid under said contract to The Trustees of Princeton University, P.O. Box 472, Princeton, N. J. (hereinafter called the Contractor) or to its assignees, if any, the Contractor, upon payment of the said sum by the UNITED STATES OF AMERICA (hereinafter called the Government), does remis, release, and discharge the Government, its officers, agents, and employees, of and from all liabilities, obligations, claims, and demands whatsoever under or arising from the said contract, except:

1. Specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor, as follows: **None**
2. Claims, together with reasonable expenses incidental thereto, based upon the liabilities of the Contractor to third parties arising out of the performance of the said contract, which are not known to the Contractor on the date of the execution of this release and of which the Contractor gives notice in writing to the Contracting Officer within the period specified in the said contract.
3. Claims for reimbursement of costs (other than expenses of the Contractor by reason of its indemnification of the Government against patent liability), including reasonable expenses incidental thereto, incurred by the Contractor under the provisions of the said contract relating to patents.

The Contractor agrees, in connection with patent matters and with claims which are not released as set forth above, that it will comply with all of the provisions of the said contract, including without limitation those provisions relating to notification to the Contracting Officer and relating to the defense or prosecution of litigation.

IN WITNESS WHEREOF, this release has been executed this 5 day of October, 19 61.

The Trustees of Princeton University

By   
R. J. Woodrow  
Title Asst. Treasurer

#### C E R T I F I C A T E

I, Alexander Leitch, certify that I am the Secretary of the corporation named as Contractor in the foregoing release; that R. J. Woodrow who signed said release on behalf of the Contractor was the Asst. Treasurer of said corporation; that said release was duly signed for and in behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.



Corporate  
Seal



CONTRACTOR'S ASSIGNMENT OF REFUNDS, REBATES, CREDITS,  
AND OTHER AMOUNTS

Contract No. Nonr-1858(04)

Pursuant to the terms of Contract No. Nonr-1858(04)  
and in consideration of the reimbursement of costs as provided in the said  
contract and any assignment thereunder, The Trustees of Princeton University,  
P.O. Box 472, Princeton, N. J. (hereinafter called the Contractor) do hereby:

1. Assign, transfer, set over and release to the UNITED STATES OF AMERICA  
(hereinafter called the Government), all right, title and interest to all  
refunds, rebates, credits and other amounts (including any interest  
thereon) arising out of the performance of the said contract, together  
with all the rights of action accrued or which may hereafter accrue  
thereunder.

2. Agree to take whatever action may be necessary to effect prompt  
collection of all refunds, rebates, credits and other amounts (including  
any interest thereon) due or which may become due, and to promptly forward  
to the

Navy Department, U. S. Navy Regional Accounts Office, Washington, D. C.

checks (made payable to the Treasurer of the United States) for any  
proceeds so collected. The reasonable costs of any such action to effect  
collection shall constitute allowable costs when approved by the  
Contracting Officer as stated in the said contract and may be applied to  
reduce any amounts otherwise payable to the Government under the terms  
hereof.

3. Agree to cooperate fully with the Government as to any claim or suit  
in connection with refunds, rebates, credits or other amounts due  
(including any interest thereon); to execute any protest, pleading,  
application, power of attorney or other papers in connection therewith;  
and to permit the Government to represent it at any hearing, trial or  
other proceeding arising out of such claim or suit.

IN WITNESS WHEREOF, this assignment has been executed this 5 day of  
October 1964



contract and any assignment thereunder, the Contractor do hereby:  
P.O. Box 472, Princeton, N. J. (hereinafter called the Contractor) do hereby:

1. Assign, transfer, set over and release to the UNITED STATES OF AMERICA (hereinafter called the Government), all right, title and interest to all refunds, rebates, credits and other amounts (including any interest thereon) arising out of the performance of the said contract, together with all the rights of action accrued or which may hereafter accrue thereunder.

2. Agree to take whatever action may be necessary to effect prompt collection of all refunds, rebates, credits and other amounts (including any interest thereon) due or which may become due, and to promptly forward to the


Navy Department, U. S. Navy Regional Accounts Office, Washington, D. C.

checks (made payable to the Treasurer of the United States) for any proceeds so collected. The reasonable costs of any such action to effect collection shall constitute allowable costs when approved by the Contracting Officer as stated in the said contract and may be applied to reduce any amounts otherwise payable to the Government under the terms hereof.

3. Agree to cooperate fully with the Government as to any claim or suit in connection with refunds, rebates, credits or other amounts due (including any interest thereon); to execute any protest, pleading, application, power of attorney or other papers in connection therewith; and to permit the Government to represent it at any hearing, trial or other proceeding arising out of such claim or suit.


IN WITNESS WHEREOF, this assignment has been executed this 5 day of October, 1961.

The Trustees of Princeton University

By   
R. J. Woodrow  
Title Asst. Treasurer

C E R T I F I C A T E

I, Alexander Leitch, certify that I am the Secretary of the corporation named as Contractor in the foregoing assignment; that R. J. Woodrow who signed said assignment on behalf of the Contractor was then Asst. Treasurer of said corporation; that said assignment was duly signed for and in behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.



Corporate  
Seal



Trustees of Princeton University  
Princeton, New Jersey

Contract No. Nonr 1858(04)  
Contract Audit Closing Statement

CERTIFICATE OF THE NAVY AUDITOR

The undersigned hereby certifies that the contractor's books, records and original evidence of costs pertaining to Contract No. Nonr 1858(04) have been audited in accordance with the instructions of the Office of the Comptroller of the Navy and that as a result of such audit it has been determined that the amount of \$51,003.28 represents the allowable cost of performing said contract in accordance with the terms thereof.

10 October 1961

Date



H. W. HATTON  
Chief Auditor

CERTIFICATE OF THE TECHNICAL INSPECTOR

The undersigned hereby certifies that to the best of his knowledge and belief the contractor has satisfactorily completed Contract No. Nonr 1858(04) and that all Government property has been properly disposed of and/or accounted for.

2/14/62  
Date



MATHEMATICS Branch  
ONR Code 432

Enclosure (5)



Trustees of Princeton University  
Princeton, New Jersey

Contract No. Nonr 1858(04)  
Contract Audit Closing Statement

CERTIFICATE OF THE NAVY AUDITOR

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10 October 1961

Date

H. W. HATTON

H. W. HATTON  
Chief Auditor

CERTIFICATE OF THE TECHNICAL INSPECTOR

The undersigned hereby certifies that to the best of his knowledge and belief the contractor has satisfactorily completed Contract No. Nonr 1858(04) and that all Government property has been properly disposed of and/or accounted for.

2/14/62  
Date

Lula Bram

MATHEMATICS BRANCH  
ONR Code 432

Enclosure (5)



Trustees of Princeton University  
Princeton, New Jersey

Contract No. Nonr 1858(04)  
Contract Audit Closing Statement

CERTIFICATE OF THE NAVY AUDITOR

The undersigned hereby certifies that the contractor's books, records and original evidence of costs pertaining to Contract No. Nonr 1858(04) have been audited in accordance with the instructions of the Office of the Comptroller of the Navy and that as a result of such audit it has been determined that the amount of \$51,003.28 represents the allowable cost of performing said contract in accordance with the terms thereof.

10 October 1961

Date

H. W. HATTON

H. W. HATTON  
Chief Auditor

CERTIFICATE OF THE TECHNICAL INSPECTOR

The undersigned hereby certifies that to the best of his knowledge and belief the contractor has satisfactorily completed Contract No. Nonr 1858(04) and that all Government property has been properly disposed of and/or accounted for.

2/14/62  
Date

Lila Brand

MATHEMATICS BRAND  
ONR Code 432

Enclosure (5)



**PRINCETON UNIVERSITY**

**ENTRY ONE, PYNE ADMINISTRATION BUILDING**

**PRINCETON, NEW JERSEY**

**UNIVERSITY RESEARCH BOARD**

**HENRY D. SMYTH, *Chairman***

**OFFICE OF RESEARCH ADMINISTRATION**

**RAYMOND J. WOODROW, *Director***

**(P.O. Box 172)**

**March 17, 1960**

**Mr. J. H. Levy  
ONR Resident Representative  
Chemical Science Building  
James Forrestal Research Center  
Princeton, New Jersey**

**Subject: Contract Noar 1858(04) - Property**

**Dear Mr. Levy:**

**The purpose of this letter is to certify that  
there was no accountable property acquired under the  
subject contract.**

**Yours very truly,**

*Signed*

**Stephen Kidd  
Administrative Assistant**

**SK/pan**

**File: C-904 Property**

*Encl 6*



PRINCETON UNIVERSITY

ENTRY ONE, PYNE ADMINISTRATION BUILDING

PRINCETON, NEW JERSEY

UNIVERSITY RESEARCH BOARD

HENRY D. SMYTH, *Chairman*

OFFICE OF RESEARCH ADMINISTRATION

RAYMOND J. WOODROW, *Director*

(P.O. Box 172)

January 22, 1960

Office of Naval Research  
346 Broadway  
New York 13, New York

Attention: Mr. J. H. Levy

Subject: Final Invention Statement - Contract Nonr 1858(04)

Gentlemen:

Enclosed herewith for your record and file are copies of the  
Final Invention Statement under the above referenced contract.  
We trust that this will meet with your approval.

Sincerely,

Raymond J. Woodrow

Enclosures

cc: A. W. Tucker

pan

P.S. Please be advised that no royalties have been paid in  
connection with performance of work hereunder.

1458 11 02 14 40

Encl 7



PRINCETON UNIVERSITY  
Princeton, New Jersey

Account: C-904

FINAL INVENTION STATEMENT

Sponsor: Office of Naval Research

Contract or Grant No.: Nonr 1858(04)

Period Covered: 4/1/56 - 9/30/59

I hereby certify, that, to the best of my knowledge and belief, no inventions, improvements or discoveries, which reasonably appear to be patentable, were conceived or first actually reduced to practice by persons engaged in the performance of the work under the above contract during the period indicated, except as follows:

Name of Inventor

Title of Invention

Sent to Sponsor

None

By

A. W. Tucker

A. W. Tucker  
Title Project Leader

Approved by:

R. J. Woodrow

Raymond J. Woodrow  
Assistant Treasurer

Date: JAN 25 1960

Form #5-F

(Submit 5 copies)

Approved

L. B. Applebaum  
Louis B. Applebaum  
Head, Patent Department

Approved

S. Berman  
Dr. S. Berman  
Head, Scientific Department

JAN 26 1960



PRINCETON UNIVERSITY  
Princeton, New Jersey

Account: G-904

FINAL INVENTION STATEMENT

Sponsor: Office of Naval Research

Contract or Grant No.: N00018-60

Period Covered: 4/1/56 - 9/30/59

I hereby certify, that, to the best of my knowledge and belief, no inventions, improvements or discoveries, which reasonably appear to be patentable, were conceived or first actually reduced to practice by persons engaged in the performance of the work under the above contract during the period indicated, except as follows:

Name of Inventor

Title of Invention

Sent to Sponsor

By

Sd A W Tucker

A. W. Tucker

Title

Project Leader

Approved by:

Sd

Raymond J. Woodrow  
Assistant Treasurer

Approved

L B Applebaum  
Head Patents

Date:

Jan 25 1960

Form #5-7

Head

Cy

(Submit 5 copies)



**PRINCETON UNIVERSITY**

**ENTRY ONE, PYNE ADMINISTRATION BUILDING**

**PRINCETON, NEW JERSEY**

**UNIVERSITY RESEARCH BOARD**

**HENRY D. SMYTH, *Chairman***

**OFFICE OF RESEARCH ADMINISTRATION**

**RAYMOND J. WOODROW, *Director***

**(P.O. Box 172)**

**January 22, 1960**

**Office of Naval Research  
346 Broadway  
New York 13, New York**

**Attention: Mr. J. M. Levy**

**Subject: Final Invention Statement - Contract Nonr 1858(04)**

**Gentlemen:**

**Enclosed herewith for your record and file are copies of the  
Final Invention Statement under the above referenced contract.  
We trust that this will meet with your approval.**

**Sincerely,**

**Raymond J. Woodrow**

**Enclosures**

**cc: A. W. Tucker**

**pan**

**P.S. Please be advised that no royalties have been paid in  
connection with performance of work hereunder.**



OFFICE OF NAVAL RESEARCH, NEW YORK  
346 BROADWAY  
NEW YORK 13, NEW YORK

IN REPLY REFER TO

44-3/3P/JHL:jbn

N0nr 1858 (04)

Ser 4239

NOV 7 1961

FIRST ENDORSEMENT On U.S. Navy Area Audit Office, Philadelphia 22, Pa.  
ltr PRO 7584/Prin U dtd 12 October 61 /s/ W.E. Cates /w/ enclosures to  
ONR New York

From: Commanding Officer, Office of Naval Research, New York 13, N.Y.  
To: Office of Naval Research, Washington 25, D.C. (Code 650)  
Via: Comptroller of the Navy (Contract Audit Division) Washington 25, D.C.  
Subj: Contract N0nr 1858 (04) (NR 043-942) /w/ Princeton U, Princeton, N.J.  
Contract Audit Closing Statement dtd 12 Oct. 61 and related documents-  
Forwarding of  
Encl: (6) Contractor's Final Property Certificate dtd 17 March 60 (2 cys)  
(7) Contractor's Final Invention Statement dtd 25 Jan. 60  
(Original & 2 cys)

1. Basic correspondence with enclosures thereto are forwarded for appropriate action.
2. The technical Officer's certification appears on the reverse side of enclosure (1) and has been signed by the cognizant Resident Representative of the Office of Naval Research, New York. The certificate of the Technical Inspector contained in enclosure (5) is referred to the Office of Naval Research, Washington 25, D.C. (Code 432) for signature.
3. Enclosure (6) is the contractor's Final Property Certification. ONR New York concurs with the contents therein. No property was furnished or fabricated on the work, and therefor none remains.
4. As indicated in enclosure (7) the contractor certifies that no patentable discoveries or inventions were conceived during the course of the work. The contractors statement to that effect is concurred in by the respective Heads of the Scientific and Patent Departments as evidenced by their signatures.
5. No classified documents were furnished to or generated by the contractor during the course of the work, therefor none remain.
6. The final technical report was furnished to the cognizant Scientific Officer 26 August 1960.



NDnr 1858 (04)  
Ser 4239

NOV 7 1961

7. One copy each of enclosures (1) through (7) has been retained for the files of the Office of Naval Research, New York 13, New York.

C.W. HEYWOOD

CC to:

ONR-Wash-Code 640 /w/ Orig. & 1 cy encl: (6) ←  
" " " 402S

NAAO-NY (Property Audit Division)

NAAO-Philadelphia, Pa.

NAG-Princeton, NJ



PRINCETON UNIVERSITY  
ENTRY ONE, PYNE ADMINISTRATION BUILDING  
PRINCETON, NEW JERSEY

UNIVERSITY RESEARCH BOARD  
HENRY D. SMYTH, *Chairman*

OFFICE OF RESEARCH ADMINISTRATION  
RAYMOND J. WOODROW, *Director*  
(P.O. Box 172)

March 17, 1960

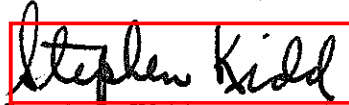
Mr. J. H. Levy  
ONR Resident Representative  
Chemical Science Building  
James Forrestal Research Center  
Princeton, New Jersey

Subject: Contract Nonr 1858(04) - Property

Dear Mr. Levy:

The purpose of this letter is to certify that there was no accountable property acquired under the subject contract.

Yours very truly,



Stephen Kidd  
Administrative Assistant

SK/pan

File: C-904 Property

*Encl 6*



**PRINCETON UNIVERSITY**

**ENTRY ONE, PYNE ADMINISTRATION BUILDING**

**PRINCETON, NEW JERSEY**

**UNIVERSITY RESEARCH BOARD**

**HENRY D. SMYTH, *Chairman***

**OFFICE OF RESEARCH ADMINISTRATION**

**RAYMOND J. WOODROW, *Director***

**(P.O. Box 172)**

**March 17, 1960**

**Mr. J. H. Levy  
ONR Resident Representative  
Chemical Science Building  
James Forrestal Research Center  
Princeton, New Jersey**

**Subject: Contract Noar 1858(04) - Property**

**Dear Mr. Levy:**

The purpose of this letter is to certify that there was no accountable property acquired under the subject contract.

**Yours very truly,**

**Stephen Kidd  
Administrative Assistant**

**SK/pan**

**File: G-904 Property**



DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

CONTRACT NUMBER: Nonr-1858(04)  
NR NUMBER: 043-942  
AMENDMENT NUMBER: 5

*Rec'd 3/3/61*

ONR:603:EAS:eal  
Nonr-1858(04)  
(Mathematical  
Sciences Division)

20 February 1961

The Trustees of Princeton University

Princeton, New Jersey

To establish the negotiated overhead rate under Task Order Nonr-1858(04) for the period from 1 July 1958 through 30 June 1959 in accordance with Clause 33, "Negotiated Overhead Rates," of the contract, said Task Order, as amended, is hereby further amended as follows:

1. Effective as of the date of this amendment, delete the tabulation under Section D covering the period from 1 July 1958 through 30 June 1959 in its entirety and substitute in lieu thereof the following:

<u>%</u>	<u>"Period for which Applied"</u>	
	<u>From</u>	<u>Through</u>
<u>67%</u> of the salaries and wages reimbursed under Clause 18(a)(2) of the contract	1 July 1958	30 June 1959
At billing rates acceptable to the Comptroller of the Navy (Contract Audit Division.)"	1 July 1959	30 June 1960

This amendment makes no change in the estimated cost of Task Order Nonr-1858(04).



BW

4 April 1961

Princeton University  
Entry One, Pyne Administration Building  
Princeton, New Jersey

Raymond J. Woodrow, Director of Research  
Administration.

Nonr-1858(02)	Amend No. 9
Nonr-1858(03)	Amend No. 14
Nonr-1858(04)	Amend No. 5
Nonr-1858(05)	Amend No. 9
Nonr-1858(11)	Amend No. 5
Nonr-1858(12)	Amend No. 5
Nonr-1858(14)	Amend No. 11
Nonr-1858(15)	Amend No. 5



PRINCETON UNIVERSITY  
ENTRY ONE, PYNE ADMINISTRATION BUILDING  
PRINCETON, NEW JERSEY

UNIVERSITY RESEARCH BOARD  
HENRY D. SMYTH, *Chairman*

OFFICE OF RESEARCH ADMINISTRATION  
RAYMOND J. WOODROW, *Director*  
(P.O. Box 172)

March 24, 1961

Department of the Navy  
Office of Naval Research  
Washington 25, D. C.

Attention: Code 650

Subject: Contract Nonr 1858(03), Amendment No. 14  
Contract Nonr 1858(04), Amendment No. 5  
Contract Nonr 1858(05), Amendment No. 9

Gentlemen:

Enclosed herewith you will find three copies each of the subject documents executed on behalf of Princeton University. After execution on behalf of the Government, an executed copy of each of the subject documents would be appreciated for our file.

Yours very truly,

Raymond J. Woodrow  
Director

Enclosures

SK/pan





DEPARTMENT OF THE NAVY

OFFICE OF NAVAL RESEARCH

WASHINGTON 25, D. C.

IN REPLY REFER TO

ONR:650: MPD

8 MAR 1961

The Trustees of  
Princeton University  
Princeton, New Jersey  
Subject: Contract

Nonr-1858(02), Amendment 9  
Nonr-1858(03), Amendment 14  
Nonr-1858(04), Amendment 5  
Nonr-1858(05), Amendment 9  
Nonr-1858(06), Amendment 7  
Nonr-1858(07), Amendment 4

Gentlemen:

Four copies of the subject contractual document(s) are forwarded herewith. Three are for execution and one is for information and retention. If the terms and conditions thereof are acceptable to you, the three copies should be executed by you and returned to this Office, Attention: Code 650. Upon receipt, this material will be executed on behalf of the Government and a fully executed copy returned to you.

The Contractor's name as used on the execution page should be identical to that shown on the first page of the contract. If, however, the title shown is incorrect, it is requested that this document be executed using the correct name on the execution page and that this Office be so advised in order that the other pages may be corrected accordingly.

If for any reason you are unable to execute and return three copies of this document within ten days, please acknowledge receipt of this letter and furnish an estimated date of execution.

Sincerely yours,

J. J. SHEA  
CDR, SC, USN  
Contracting Officer

Encls:

1. Four (4) copies of the subject document(s)
2. Instructions Respecting Execution

CC: ONRBO - New York  
NAAO - Philadelphia



## Office Memorandum • UNITED STATES GOVERNMENT

TO : Code 650 *Post for*  
Via: Code 430, 404, 400 *A*

DATE: 16 March 1959

FROM : Code 432

SUBJECT: Foreign travel by Prof. Hayes under Princeton University Contract  
Nonr 1858(04)

1. Post approval in an amount not to exceed \$59.40 is recommended to cover part of Professor Hayes' travel expenses to the International Congress of Mathematicians held in Edinburgh last year.

*Ivar Stakgold*  
IVAR STAKGOLD

3. This letter will constitute the authorization of the Contracting Officer for you to approve charges not to exceed \$59.40 for this purpose.

HARRY I. RAVITZ  
By direction

Copy to:  
Code 432



ONR:650:HIR:ecw  
Nonr-1858(04)

31 March 1959

From: Chief of Naval Research  
To: Commanding Officer, ONR Branch Office, New York  
Subj: Contract Nonr-1858(04) with Princeton University;  
authorization for charges for foreign travel by  
Professor Hayes

1. It is understood that Professor Hayes, Princeton University, Contract Nonr-1858(04), attended the International Congress of Mathematicians held in Edinburgh last year.
2. The Assistant Chief of Research (ONR Code 400) has granted a post approval in an amount not to exceed \$59.40 to cover part of Professor Hayes' travel expenses in connection with his attendance at this meeting.
3. This letter will constitute the authorization of the Contracting Officer for you to approve charges not to exceed \$59.40 for this purpose.

HARRY I. RAVITZ  
By direction

Copy to:  
Code 432



ONR:650:3ED  
Nonr-1858(01)  
Nonr-1858(02)  
Nonr-1858(04)  
Nonr-1858(08)

26 February 1959

The Trustees of Princeton University  
Princeton, New Jersey

Gentlemen:

There is enclosed herewith for your information and retention one copy each of the following contractual documents which have been executed by both parties:

Amendment No. 4 to Contract Nonr-1858(01)  
Amendment No. 5 to Contract Nonr-1858(02)  
Amendment No. 4 to Contract Nonr-1858(04)  
Amendment No. 2 to Contract Nonr-1858(08)

Distribution of these documents is being made on this date to Government agencies concerned therewith.

Sincerely yours,

HARRY I. RAVITZ  
Head, Contract Administration  
Branch  
By direction of  
Chief of Naval Research

Encl:





DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

IN REPLY REFER TO

ONR:650: <sup>HEB</sup>

Nonr-1858(01), A 4

Nonr-1858(02), A 5

and

Nonr-1858(04), A 4

The Trustees of  
Princeton University  
Princeton, New Jersey

Subject: Contract Nonr-1858(01), Amendment 4, Nonr-1858(02),  
Amendment 5 and Nonr-1858(04), Amendment 4.  
Gentlemen:

Four copies of the subject contractual document(s) are forwarded herewith. Three are for execution and one is for information and retention. If the terms and conditions thereof are acceptable to you, the three copies should be executed by you and returned to this Office, Attention: Code 650. Upon receipt, this material will be executed on behalf of the Government and a fully executed copy returned to you.

The Contractor's name as used on the execution page should be identical to that shown on the first page of the contract. If, however, the title shown is incorrect, it is requested that this document be executed using the correct name on the execution page and that this Office be so advised in order that the other pages may be corrected accordingly.

If for any reason you are unable to execute and return three copies of this document within ten days, please acknowledge receipt of this letter and furnish an estimated date of execution.

Sincerely yours,

100-100000-100000  
RECEIVED 10-10-55

Encls:

1. Four (4) copies of the subject document(s)
2. Instructions Respecting Execution

CC: ONR - New York Br.

D49096



ONR:650:SRD  
Nonr-1858(04)

12 November 1958

Princeton University  
Committee on Project Research and Inventions  
P.O. Box 172  
Princeton, New Jersey

Attention: Raymond J. Woodrow  
Executive Officer

Gentlemen:

There is enclosed herewith for your information and retention one copy of Amendment No. 3 to your Contract Nonr-1858(04) which has been executed by both parties.

Distribution of this document is being made on this date to Government agencies concerned therewith.

Sincerely yours,

HARRY I. RAVITZ  
Head, Contract Administration  
Branch  
By direction of  
Chief of Naval Research

Encl:



PRINCETON UNIVERSITY  
COMMITTEE ON PROJECT RESEARCH AND INVENTIONS  
P.O. BOX 172  
PRINCETON, N.J.

November 5, 1958

Department of the Navy  
Office of Naval Research  
Washington 25, D.C.

Attention: ONR:650:NED

Subject: Contract Nonr-1858(04), Amendment 3.

Gentlemen:

Enclosed herewith you will find three copies of the subject document duly executed by Princeton University. After execution by the Government, a fully executed copy would be appreciated for our files.

Very truly yours,



Raymond J. Woodrow  
Executive Officer

ms.

mg  
enclosures (3)





DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

IN REPLY REFER TO  
ONR:650: NED  
Nonr-1858(04), A 3

The Trustees of Princeton University  
Princeton, New Jersey

31 OCT 1958

Subject: Contract Nonr-1858(04), Amendment 3

Gentlemen:

Four copies of the subject contractual document(s) are forwarded herewith. Three are for execution and one is for information and retention. If the terms and conditions thereof are acceptable to you, the three copies should be executed by you and returned to this Office, Attention: Code 650. Upon receipt, this material will be executed on behalf of the Government and a fully executed copy returned to you.

The Contractor's name as used on the execution page should be identical to that shown on the first page of the contract. If, however, the title shown is incorrect, it is requested that this document be executed using the correct name on the execution page and that this Office be so advised in order that the other pages may be corrected accordingly.

If for any reason you are unable to execute and return three copies of this document within ten days, please acknowledge receipt of this letter and furnish an estimated date of execution.

Sincerely yours,

E. P. BLEDSOE  
Contracting Officer

Encls:

1. Four (4) copies of the subject document(s)



PRINCETON UNIVERSITY  
COMMITTEE ON PROJECT RESEARCH AND INVENTIONS  
P.O. BOX 172  
PRINCETON, N.J.

RAYMOND J. WOODROW  
Executive Officer and Secretary

July 18, 1958

LESLIE L. VIVIAN  
Assistant Executive Officer

Office of Naval Research  
Department of the Navy  
Washington 25, D. C.

VIA Office of Naval Research  
346 Broadway  
New York 13, New York

Attn: Code 430, Mathematics Branch Attn: Mr. J. H. Levy

Subject: Contract Nonr 1858(04)

Gentlemen:

The purpose of this letter is to request that the subject contract be extended for the period of one year beyond the present completion date of September 30, 1958 without increase in contract funds.

This request is made in behalf of Prof. A. W. Tucker on the basis that the financial balance anticipated as of September 30, 1958 will be adequate to support the activity which the Department of Mathematics would like to continue under this contract. Specifically, Prof. Lefschetz will be in Princeton on a regular basis this fall, and will have an opportunity to prepare a terminal report. Funds will be adequate for report preparation and consultant charges. Extension of the contract period will also provide further time for consideration of a continuing program of research on Differential Equations Studies.

Your consideration of this request will be appreciated. Please let us know if there are any questions.

Yours very truly,

  
Raymond J. Woodrow  
Executive Officer


RJW/SK/dkw

cc: Prof. A. W. Tucker  
File A-904

Encl (11)



ONR:650:HW  
Nonr-1858(04)  
Nonr-1858(05)  
Nonr-1858(09)  
Nonr-1858(22)  
Nonr-1858(23)



7 July 1958

Princeton University  
Post Office Box 172  
Princeton, N.J.

Gentlemen:

There is enclosed herewith for your information and retention one copy each of the following contractual documents which have been executed by both parties.

Amendment No. 2 to Contract Nonr-1858(04)  
" No. 4 to Contract Nonr-1858(05)  
" No. 4 to Contract Nonr-1858(09)  
" No. 1 to Contract Nonr-1858(22)  
" No. 1 to Contract Nonr-1858(23)

Distribution of these documents is being made on this date to Government agencies concerned therewith.

Sincerely yours,

HARRY I. RAVITZ  
Head, Contract  
Administration Branch  
By direction of  
Chief of Naval Research

Encl.



PRINCETON UNIVERSITY  
COMMITTEE ON PROJECT RESEARCH AND INVENTIONS  
P.O. BOX 172  
PRINCETON, N.J.

JUN 25 1958  
~~JUN 17, 1958~~

Department of the Navy  
Office of Naval Research  
Washington 25, D. C.

Attn: Code 650:NED


Gentlemen:

In reply to your letter of June 12, 1958, we are attaching three (3) copies of each of the following contract amendments, executed in behalf of Princeton University:

Nonr-1858(04) - A-2  
Nonr-1858(05) - A-4  
Nonr-1858(09) - A-4

We will look forward to receiving one (1) fully executed copy of each amendment for our file.

Yours very truly,

  
for Raymond J. Woodrow  
Executive Officer

RJW/SK/jk  
cc: File A-904  
A-905  
A-909





DEPARTMENT OF THE NAVY  
OFFICE OF NAVAL RESEARCH  
WASHINGTON 25, D. C.

IN REPLY REFER TO  
ONR:650: NED  
Nonr-1858(04), A 2  
Nonr-1858(05), A 4  
and  
Nonr-1858(09), A 4

The Trustees of Princeton  
University  
Princeton, New Jersey

12 JUN 1958

Subject: Contract s Nonr-1858(04), Amendment Number: 2, Nonr-1858(05),  
Amendment Number: 4 and Nonr-1858(09), Amendment Number: 4

Gentlemen:

Four copies of the subject contractual document(s) are forwarded herewith. Three are for execution and one is for information and retention. If the terms and conditions thereof are acceptable to you, the three copies should be executed by you and returned to this Office, Attention: Code 650. Upon receipt, this material will be executed on behalf of the Government and a fully executed copy returned to you.

The Contractor's name as used on the execution page should be identical to that shown on the first page of the contract. If, however, the title shown is incorrect, it is requested that this document be executed using the correct name on the execution page and that this Office be so advised in order that the other pages may be corrected accordingly.

If for any reason you are unable to execute and return three copies of this document within ten days, please acknowledge receipt of this letter and furnish an estimated date of execution.

Sincerely yours,

J. J. SHEA  
CDR, SC, USN  
Contracting Officer

Encls:

1. Four (4) copies of the  
subject document(s)



655  
ONR:650:HIR:rls  
Nonr-1858(04)

1 November 1957

7HR  
650  
From: Chief of Naval Research  
To: Commanding Officer, Office of Naval Research Branch Office,  
New York

Subj: Contract Nonr-1858(04) Princeton University; approval of travel  
expenses

Ref: (a) ONR BrOf/New York ltr L4-3/2A/JHL:cs Ser 5615 of Oct 57 to  
CNR (Code 650)

- 008  
432  
2709
1. Reference (a) forwarded a request from Princeton University requesting approval of the Contracting Officer for a portion of the transportation expenses of Dr. Earl A. Coddington from California to Princeton and return. It is indicated that Dr. Coddington is going to be employed as a visiting associate professor to work half time on Contract Nonr-1858(04) and half time on teaching duties.
  2. The Scientific Officer (ONR Code 432) has approved the subject transportation as to technical necessity.
  3. This letter will constitute the authorization of the Contracting Officer for you to approve as a charge against the subject contract transportation expenses in an estimated amount of \$405.00 which would represent approximately 50% of the round trip transportation expenses for Dr. Coddington based on the information contained in the contractor's letter. This approval is being granted pursuant to Clause 18 (a)(7).

HARRY I. RAVITZ  
By direction

COPY TO:  
ONR CODE 432



OFFICE OF NAVAL RESEARCH, NEW YORK  
346 BROADWAY  
NEW YORK 13, NEW YORK

IN REPLY REFER TO

L4-3/2A/JHL:cs  
Nonr-1858(04)  
Ser 5615


OCT 22 1957

From: Commanding Officer, Office of Naval Research, New York  
To: Chief of Naval Research (Code 650)

Subj: Contract Nonr-1858(04) (NR 043-942) Princeton University,  
Princeton NJ - Travel expenses of Dr. Earl A. Coddington  
from Los Angeles, Calif. to Princeton, N. J.; Authorization  
for approval of

Encl: (1) Princeton U ltr /s/ L L Vivian dtd 16 Oct 57 to ONR NY

1. Inasmuch as subject contract, Paragraph 18 Allowable costs, does not cover travel expense as outlined in enclosure (1), it is requested that this office be advised regarding authorization of the contractor's request.

  
J. H. LEVY  
By direction



[illegible]

October 16, 1957

Commanding Officer  
Office of Naval Research  
346 Broadway  
New York 13, New York

Attn: J. H. Levy

**Subject: Contract Nonr-1858(04) - Transportation Expenses**

**Gentlemen:**

This letter is written with reference to Princeton proposal for the extension of Contract Nonr-1858(04), as forwarded to you under date of March 11, 1957. That proposal made clear the plans for bringing Dr. Earl A. Coddington to Princeton as a visiting associate professor to work half time on the non-linear differential equation project and half time on teaching duties.

As you know, it is Princeton policy to encourage exchanges of opinions between top level personnel and in this connection to prevent the individuals involved from suffering financial loss as a result of their agreement to participate. In this instance, Dr. Coddington has transported himself and his family to Princeton from Los Angeles, California. After a year in Princeton he will return to his home there.

No movement of large household affects is involved, but Princeton has agreed to absorb the costs of personal transportation. In that Dr. Coddington will be working <sup>SLIGHTLY</sup> more than half time over the period of the year that he is here on work associated with Contract Nonr-1858(04), Princeton proposes to absorb one half the transportation costs of round trip travel and to propose that the Contract absorb the other half. A breakdown of expenses involved indicates that \$404.88 (including \$65.16 of railway express shipping costs) was involved in the one way move to Princeton. Using these figures as a basis, we should like to request that a total of \$405.00 be authorized as a charge to the contract in connection with round trip travel costs. Your approval of this request will be appreciated.

Yours very truly,

HLVưi

L. L. Vivian  
Assistant Executive Officer

LLV/jk

cc: J. C. Moore  
A. Henry

Encl (1)



ONR:650:rls  
Nonr-1858(04)  
Nonr-1858(16)

2 October 1957

Princeton University  
Committee on Project Research and Inventions  
Princeton, New Jersey

Attention: Raymond J. Woodrow

Gentlemen:

We are enclosing herewith for your information and retention one original executed copy each of the following contractual documents which have been executed by both parties:

Amendment Number 1 to Contract Nonr-1858(04)  
Amendment Number 1 to Contract Nonr-1858(16)

Distribution of these documents is being made this date to Government agencies concerned therewith.

Sincerely yours,

Harry I. Ravitz  
Head, Contract Administration  
and Distribution Branch  
By direction of  
Chief of Naval Research

Encls.



PRINCETON UNIVERSITY  
COMMITTEE ON PROJECT RESEARCH AND INVENTIONS  
P.O. BOX 172  
PRINCETON, N.J.

RAYMOND J. WOODROW  
Executive Officer and Secretary

LESLIE L. VIVIAN  
Assistant Executive Officer

September 3, 1957

Department of the Navy  
Office of Naval Research  
Washington 25, D.C.

Attention: Code 650

Subject: Contract Nonr-1858(04), Amendment Number #1

Gentlemen:

Enclosed herewith are three executed copies of the subject amendment, which were forwarded with your letter of 19 August 1957. We have transmitted to you by letter dated August 30, 1957 the three copies of Amendment Number #1 to Contract Nonr-1858(00) which were unexecuted and which we trust will be modified in accordance with our letter.

Sincerely yours,



Raymond J. Woodrow

mg  
enclosures

*Note - 10/2*

*modification has been accomplished*







DEPARTMENT OF THE NAVY

OFFICE OF NAVAL RESEARCH

WASHINGTON 25, D. C.

IN REPLY REFER TO

ONR:650

Nonr-1858(00), A 4

and

Nonr-1858(04), A 1

The Trustees of Princeton University

Princeton, New Jersey

19 AUG 1957

Subject: Contract Nonr-1858(00), Amendment Number: 4, and  
Nonr-1858(04), Amendment Number: 1

Gentlemen:

Four copies of the subject contractual document(s) are forwarded herewith. Three are for execution and one is for information and retention. If the terms and conditions thereof are acceptable to you, the three copies should be executed by you and returned to this Office, Attention: Code 650. Upon receipt, this material will be executed on behalf of the Government and a fully executed copy returned to you. Inasmuch as no formal obligation of funds can be made prior to execution by both parties to the contract, you are urged to execute this material as promptly as possible.

The Contractor's name as used on the execution page should be identical to that shown on the first page of the contract. If, however, the title shown is incorrect, it is requested that this document be executed using the correct name on the execution page and that this Office be so advised in order that the other pages may be corrected accordingly.

If for any reason you are unable to execute and return three copies of this document within ten days, please acknowledge receipt of this letter and furnish an estimated date of execution.

Sincerely yours,

J. J. SHEA  
CDR, SC, USN  
Contracting Officer



*Pickman app*

Request for Approval to Obligate  
a Contract under the  
Appropriation "R&D,N" - FY 1958  
prior to apportionment of funds

1. Name of Contractor: **Princeton University**  
Address **Princeton, New Jersey**

2. Amount to be obligated: **\$20,000**

3. Purpose: **Theoretical mathematics research**

4. Financial History of the contract:

(a) Not covered by commitment made on or prior to 30 June 1957.

(b) Continuation of existing contract:

(1) Contract number - - - - -: **Nonr 1853(04)**

(2) Annual rate - - - - -: **\$20,000**

(3) Unexpended balance - 1 July 1957: \*

5. Reason for expediting contract:

**This is a continuing research contract which must be renewed prior to 1 October 1957.**



655  
ONR:650:rls  
Nonr-1858(04)   
Nonr-1858(06)  
Nonr-1858(07)  
Nonr-1858(08)  
Nonr-1858(09)

Ser  
13175

The Trustees of Princeton University

Princeton, New Jersey

11 JUN 1956

Gentlemen:

There is enclosed herewith for your information and retention the following Research and Development Task Orders which have been executed by both parties:

Nonr-1858(04)  
Nonr-1858(06)  
Nonr-1858(07)  
Nonr-1858(08)  
Nonr-1858(09)

Formal distribution of these documents is being made on this date to Government agencies concerned therewith.

Sincerely yours,

HARRY I. RAVITZ  
Head, Contract Administration  
and Distribution Branch  
By direction of  
The Chief of Naval Research

Encls.



COLLATERAL COMMITMENT ADVICE

Based on Advice of Obligation decrease dated 4 June 1956, relating to the contract described in Item (1) below, commitment authority is granted for reobligation of these funds in the contract described in Item (6) below.

- (1) Contract Decreased **N6ori 105, TO. 5, Amend. 10**
- (2) Contractor **The Trustees of Princeton University**
- (3) Amount **\$ 7,446.00**
- (4) Appropriation **17X1319.58 Research & Development, Navy**
- (5) Bureau Control No. **32000**
- (6) Contract Increased **NOmr 1858(ol)**
- (7) NR Number Reference

Evidence of Contract  
Decrease examined by

cc-64-56

\_\_\_\_\_  
for Comptroller, ONR

\_\_\_\_\_  
Comptroller

Contract Record Card  
& Nav S and A 616  
Examined for availability  
of contract balance by

\_\_\_\_\_



COLLATERAL COMMITMENT ADVICE

Based on Advice of Obligation decrease dated 4 June 1956,  
relating to the contract described in Item (1) below, commitment  
authority is granted for reobligation of these funds in the contract  
described in Item (6) below.

(1) Contract Decreased	N6ori 105, TO. 5, Amend. 10
(2) Contractor	The Trustees of Princeton University
(3) Amount	\$ 3,750.00
(4) Appropriation	17X1319.68 Research & Development, Navy
(5) Bureau Control No.	8-32
(6) Contract Increased	NOnr 1858(04)
(7) NR Number Reference	

Evidence of Contract  
Decrease examined by

90-63-66

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for Comptroller, ONR

\_\_\_\_\_  
Comptroller

Contract Record Card  
& Nav S and A 616  
Examined for availability  
of contract balance by

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655  
ONR:650:BJB  
N6ori-105 T. O. V, A 10  
Nonr-1858(04)

Ser 11839

From: Chief of Naval Research  
To: Commanding Officer, Office of Naval Research, New York

23 MAY 1956

Subj: Verification of Amounts and Appropriation Data in Task Order V  
Contract N6ori-105, Amendment No. 10

Encl: (1) Verification Letter  
(2) Contract N6ori-105, T. O. V, Amendment No. 13, and  
Clearance Memorandum  
(3) Contract Nonr-1858(04) and Clearance Memorandum

1. Enclosure (2) consists of a cutback to a long term contract which provides for a reduction in time and a recovery of funds. Enclosure (3) consists of a new task Order covering the same research program and into which the recovered funds will be obligated.

2. In order to maintain complete accounting control and to assure that all of the "cutback" funds are available for obligation in the new contractual document, enclosure (1) is to be completed by your Office and the original copy thereof returned promptly to this Office. As a general rule, the Contracting Officer will not execute these contractual documents until he has the verification information set forth in enclosure (1).

3. Where your Office deems it desirable, information may be added or substituted for the standard language contained in the Verification Letter.

HARRY I. NAVITZ  
By direction





DEPARTMENT OF THE NAVY

OFFICE OF NAVAL RESEARCH

WASHINGTON 25, D. C.

IN REPLY REFER TO

ONR:650: aa

Nonr-1858(04),  
N6or1-105,  
T.O. V, A10

The Trustees of Princeton University

Princeton, New Jersey

MAY 22 1956

Subject: Contract Nonr-1858(04), and N6or1-105,  
Task Order V, Amend. 10

Gentlemen:

Four copies of the subject contractual document(s) are forwarded herewith. Three are for execution and one is for information and retention. If the terms and conditions thereof are acceptable to you, the three copies should be executed by you and returned to this Office, Attention: Code 650. Upon receipt, this material will be executed on behalf of the Government and a fully executed copy returned to you. Inasmuch as no formal obligation of funds can be made prior to execution by both parties to the contract, you are urged to execute this material as promptly as possible.

The Contractor's name as used on the execution page should be identical to that shown on the first page of the contract. If, however, the title shown is incorrect, it is requested that this document be executed using the correct name on the execution page and that this Office be so advised in order that the other pages may be corrected accordingly.

If for any reason you are unable to execute and return three copies of this document within ten days, please acknowledge receipt of this letter and furnish an estimated date of execution.

Sincerely yours,

J. J. SHEA  
CDR, SC, USN  
Contracting Officer